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Some Conclusions Drawn From My Series of Goiter Cases

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During the last nearly fourteen years in Charlotte, it has been my good fortune to have cared for a long series of goiter cases.

Cases other than goiter and bearing more or less resemblance, have included:

Cysts.

1. Sebaceous cysts.
2. Branchial cysts.
3. Lymphatic cysts. (Hygroma).
4. Dermoid cysts.

Tumors.

1. Lipoma.
2. Fibroma.
3. Angioma.
4. Tuberculous glands.
5. Hodgkin's disease.
6. Lympho-sarcoma.
7. Mixed cell tumors of the salivary glands.

The term "goiter," like "rheumatism," so well known, and in its connotative sense suggesting at least a swelling in the neck, like "rheumatism" again covers everything and touches nothing definitely.

A consideration of the various types of changes in the thyroid gland will be facilitated and rendered more objective by the following classification adapted from Marine. This classification, although simple, includes all important variations from the normal:

1. Normal.
2. Hypertrophy and hyperplasia.
3. Colloid goiter.

4. Exhaustion, atrophy, fibrosis.

5. Adenoma benign

Type a: Diffuse colloid adenomatous goiter.

Type b: Fetal, pure fetal and intermediate colloid.

6. Adenoma malignant.

7. Carcinoma.

8. Sarcoma.

9. Inflammatory.

Without further reference to them and in order to save repetition, I wish to dismiss with only a few words the host of accidental and complicating conditions that are so frequently present in tumorous thyroids, as edema, scars, hemorrhage, calcification, ossification or cysts. These conditions rarely occur in uncomplicated non-tumorous thyroids, and it is almost equally uncommon to find goiters of any size without the presence of some or all of them. These complications are not peculiar to thyroids and have no other significance than has their occurrence in any other tissue of the body.

Thyroid cysts are of two kinds: First, simple colloid retention cysts which bear no relation to tumors of the thyroid, being only distended thyroid follicles, single or coalesced; and second, cysts resulting from hemorrhage into existing adenomata or other tumors or their degeneration and necrosis. This second group includes a great majority of cysts of the thyroid.

Goiters are also grouped according to their toxicity; that is, the effect of the

secretion of the thyroid upon certain organs, or the organism as a whole. They are classified accordingly into:

1. Hyperplastic toxic goiters, accompanied by the symptom complex of Graves' disease or exophthalmic goiter.

2. Non-hyperplastic toxic goiter including adenomata and the 20 per cent. of colloid goiters accompanied by thyrotoxicosis, not of typical Graves' disease.

3. Hyperplastic non-toxic goiters including simple goiter and adenomata without thyro-toxicosis.

4. Non-hyperplastic non-toxic goiters including simple goiter and adenomata at a stand still actually lacking in secretion.

The iodine supply to the thyroid gland in large measure determines the toxicity or at least the mobilization of its colloid and hence toxicity from increased secretion. This fact has been taken advantage of in the practical application of iodine for the prevention and treatment of simple goiter as a public health measure. Marine and Kimball in their clinical experiment in the public schools of Akron, Ohio, in 1917, established this fact. The application of this principle has been extended to various endemic goiter districts, and the treatment of simple goiter, especially that appearing during adolescence and during pregnancy, so that today children especially, are being benefitted by prophylactic and curative treatment.

The benefit gained from the administration of iodine and potassium iodide, as a temporary measure, in toxic goiters, particularly in exophthalmic goiter, is not so easily explained. It is conceivable that some of the symptoms in this disease can be accounted for by a dysthyroidism, as well as a simple hyperthyroidism, and that the iodine alters the abnormal secretion qualitatively rather than quantitatively.

However, the widespread and unguarded use of iodine in the treatment of simple goiters and adenomata is dangerous and should be discouraged unless the patient is kept under the observation of a well-advised physician. The so-called goiter of adolescence and pregnancy is

a hypertrophy and hyperplasia of the thyroid with an increase of a watery colloid, and the gland is very unstable. By the injudicious use of iodine the gland can be made more active until a true hyperthyroidism is developed. Latent adenomata may appear in these glands and show a toxic activity, a condition identical with that associated with toxic adenomata, which is likely not a clinical entity but one form of hyperthyroidism.

Colloid goiter and diffuse adenomata causing pressure symptoms and those offering an elevated metabolism and very positive Goetsch test should be removed. Adenomata should certainly be removed.

Another reason for excising fetal adenomata is found in the results of studies by Allen Graham, who has found that in more than 90 per cent. of cases of malignant tumors of the thyroid the growth arose in fetal adenomata removed by Crile and his associates, whether or not malignancy was suspected, one in eight was found to be cancer.

I am glad to say that I have not been able to indulge a statement at once so sanguine and so doleful. In my personal surgical experience, while it involves nearly 800 goiter cases, I have recognized but one cancer of the thyroid. No doubt, following Graham's statistics, I have removed a number of adenomata with cancer, which I have not recognized, still I have not had one recurrence after removal.

The one case of recognized cancer, removed entirely with a large segment of skin, a portion of the sterno-hyoid and sterno-thyroid muscles, a complete lymph gland dissection and resection of the jugular vein, remained well to my knowledge for at least eight years.

The prevention of cancer by the routine removal of fetal adenomata is on a par with the prevention of cancer by the removal of moles, scars, irritations and ulcer, and the repair of lacerations of the cervix.

Let us admit, at the outset, that we know of no specific pathologic basis for the syndrome that we designate as hyperthyroidism, Graves' disease or

exophthalmic goiter. I have been impressed with the association of chronic infections. I have seen thyroiditis accompanied by symptoms of Graves' disease, accompanying syphilis and chronic osteomyelitis, relieved by appropriate treatment of the original condition. I have been impressed by the gross and microscopical picture of the gland, its density, its adhesions to the false capsule, its infiltration with leucocytes. The gland suggests either an active inflammatory involvement or changes brought about by the action of toxins upon it. Some observers say without reservation that it is a toxic thyroiditis; I say "perhaps."

I have also drawn some conclusions as to the relationship between the thyroid gland and the female genital organs particularly the ovaries:

1. Hyperthyroidism occurs in a rate of 8 or 10 to 1 in the woman.

2. Various functional disturbances in the pelvis at times accompany hyperthyroidism.

3. Cystic, fibro-cystic ovaries and large ovarian cysts are not infrequently found in connection with hyperthyroidism. I have seen a fulminating case of Graves' disease follow removal of ovarian cyst in 10 days, only to be stabilized after thyroidectomy; and I have seen a large number of cases operated for ovarian cysts before or after thyroidectomy.

4. At puberty, menstruation, the menopause and during pregnancy, the thyroid works parallel with the corpus luteum. When the corpus luteum is adequate, there is little or no enlargement of the thyroid.

5. Pelvic conditions associated with hyperthyroidism are expressed in a hypo-ovaria which has a prominent part in the histo-pathology of Graves' disease.

6. Thyroidectomy will not cure a cystic ovary; nor will the removal of a diseased ovary cure hyperthyroidism. The operative benefit lies in the reduction of the thyroid toxemia and then the removal of the pelvic impediment.

7. In myxedema there appears to be

an increased activity of the ovaries, especially in the follicles, except in so far as these glands are compressed by fat and mucin infiltration. The uterus is infiltrated with fat and mucin, along with the other tissues.

8. When the oxidation processes are increased in myxedematous and hypothyroid cases by the administration of thyroxin the genital organs may function normally.

We also must admit that there is no specific criterion on which to establish the diagnosis in borderline cases; that is, it is difficult to determine at what stage altered function on the outer boundaries of normality ends and hyperthyroidism begins. Although we must admit these uncertainties, on the other hand, there has been no case of hyperthyroidism recorded associated with a normal thyroid. We know that hyperfunction of the thyroid is an essential factor in the disease, and it follows that to obtain maximum results in the treatment of hyperthyroidism a sufficient amount of the thyroid gland must be resected at an early stage in the disease.

We feel sufficiently supported in our attitude to state positively that of all measures separately and combined, not one or all of them can approach the certainty of surgical treatment as the primary mode of attack, supplemented by the lesser measures such as rest, X-ray, iodine, removal of focal infections, etc. This conclusion is based not only on the immediate, but also on the remote mortality; that is, on the expectancy of life, no less than on the conservation of organic function and the general well-being of the individual.

The problem (paraphrasing Crile's statement) presented by the patient with hyperthyroidism is precisely the same as that which would be presented by a patient who is taking thyroid extract or iodine in such amount as to cause definite symptoms of hyperthyroidism. In the latter case, would it be best to control the racing heart and overworked myocardium by a rest cure, digitalis, bromides, diet, change of scene, etc.? Or would it be best first to stop the taking

of the drug itself and then supplement the restoration by these valuable adjuncts? In hyperthyroidism, the thyroid gland is the druggist; an extraordinary druggist, who day and night is manufacturing the poison and turning it over to the patient.

To justify our conviction that surgical treatment is the chief, the foremost, mode of attack against hyperthyroidism, we should be able to show that the immediate mortality is less than from non-surgical treatment, that life expectancy is greater, and that the end results are better.

Mild cases offer no trouble to surgery, the death rate is nil and the cures are almost one hundred per cent. The difficulty lies with the cases approaching the terminal stage of hyperthyroidism, characterized by emaciation, cardiac decomposition, swollen extremities, ascites, vomiting, acidosis and prostration—the cases that are nearing dissolution, or that show periodic or continuous delirium.

Quoting Crile again, in such cases the surgical problem is this: Is the state one of hopeless dissolution, in which even were it possible by a miracle to wish out the thyroid, death would still be inevitable? Can we differentiate between the quick and the dead? This we have found can be done almost with certainty by the application of a biologic test consisting in the following measures:

1. Restoration of the water equilibrium to the dessicated cells by giving salt solution and glucose by rectum.

2. Digitalization of the failing myocardium, whose feeble effort is not sufficient to assure the circulation of the blood in the essential organs—as the

myocardium, brain, liver, etc.—leaving these organs at this critical time in a state of relative anemia.

3. Increasing the blood volume—and oxygen carriers—by means of blood transfusion.

4. Modifying and controlling the ceaseless, exhausting restlessness and tension—physical and mental—by sedatives, bromides and abundant morphine; to say nothing of the services of a proper nurse.

If, after this biologic test, consisting in these measures, the downward course of the patient continues unchecked, as happens in about one in every 200 cases, then inevitable death confronts us.

Happily these cases improve almost always and in a few days they can survive a thyroidectomy, preferably with novocain and morphine. Occasionally after an operation there is rather violent rapid heart beat, vomiting, delirium and marked rise in temperature, which can usually be successfully combatted with fluids, digitalis and morphine, so that they will completely subside in three or four days.

By thus seizing and holding the initiative, the average length of time in the hospital before operation has been reduced to three and one-half days.

In this way, for the last ten years, I have carried nearly 800 cases rapidly to thyroidectomy without preliminary ligations and without irradiation, with only five deaths, four of these in terminal cases of exophthalmic goiter and one in a case of an enormous goiter at the colored hospital from hemorrhage and shock.

210 Professional Building.
December 20th, 1924.

Cases Illustrating the Polymorphism of Epidemic Encephalitis

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For an infection, which may involve any part of the central nervous system, to be called "encephalitis lethargica" is obviously unfortunate. Von Economo gave this name to an infection prevalent in Austria in 1916, which seemed to be confined almost entirely to the brain. Since that time identical pathological lesions have been demonstrated at autopsy in the mid-brain, bulb, cerebellum, and cord, with associated disturbances in the meninges¹ and corresponding clinical manifestations. A more descriptive term would be "meningo-myelo-encephalitis"². Even this might be misleading, so protean is the disease.

Pathology: The brunt of the inflammation falls on the small blood vessels of the meninges and the nerve tissue, resulting in a round cell infiltration, congestion and hemorrhage. Also toxic changes take place in the nerve cells, constant but not universal; affecting particular cells or groups of cells in individual nuclei, while neighboring cells show but little change³.

Symptoms: These may be meningitic, polioencephalitic, lethargic, Parkinsonian, cataleptic, cerebral, polynuritic, and myelitic⁴. Usually the cases present a combination of two or more of these. The five cases presented below illustrate some of the various groupings.

Case 1: J. M., age 13 (Hosp. No. 5013), came in January 19, 1921, complaining with pains in the joints and soreness all over. Two weeks before admission he noticed tingling in the fingers and toes. His conjunctivae were injected and the jaws sore. There were nausea and headaches in the morning before breakfast, with associated dizzi-

ness. A week before admission he noticed severe pains in the legs with considerable weakness. He would have slight rises of temperature in the evenings and sweats.

The physical examination was entirely negative save for the injected conjunctivae and the weakness in the lower extremities. The urine showed no pus or casts, a very faint test of albumin and no sugar. The white blood count was 6,000, the reds 5,320,000. The spinal fluid was under slight pressure, cloudy, and had a cell count of 280 per c. m.m., mostly lymphocytes. The globulins were increased (alcohol test) and Fehling's Solution rapidly reduced.

He returned home after the examination, and in a few months made a complete recovery. Under classification given above, this would be the polynuritic type.

Case II: W. K. T., age 23 (Hosp. No. 7611), was brought in March 26, 1923, complaining of pain in the abdomen. This began in the epigastrium, a week before admission, spread over the entire abdomen, and finally settled in the right inguinal region. He vomited after taking a purgative. On the fifth day of the disease he had an intense pain in the left knee, later in the right hip. Two days before admission, he had "jerking all over" and difficulty in urinating.

On examination there were slight tremors of the eye-lids, normal pupillary reactions, and slight congestion of the retina. Throughout the illness there was sweating about the face, more pronounced on the right. The speech jerky, resembling a hiccough, which seemed to be due to a spasm of the abdominal muscles. There were spasms of the thigh muscles also. There was no impairment of the sensations of touch, heat

¹Read before the Fourth District Medical Society at Wilson, N. C., August 11, 1924.

or cold. The tendon reflexes were normal. Both the Babinski and Kernig were negative. The Romberg was not tried.

While in the hospital, he had the sweating noted above, difficulty in voiding, hallucinations and diplopia. His pulse jumped suddenly from 100 to 140, the temperature ranged from 99.4 to 101. On one occasion it went as high as 103. The urine showed a heavy cloud of albumin and many casts on four examinations. The kidney function test was "O" on one examination (the dye was given intravenously); the blood urea 75 mg. per 100 c.c. of blood. These last two tests were made at the end of the third week of the disease. The white cell counts were 7,000 and 7,200. The spinal fluid was under 9 m.m. Hg. pressure, clear, 70 cells per c. mm., all lymphocytes. The globulins were increased (alcohol test), and Fehling's Solution reduced rapidly. Spinal fluid Wassermann negative.

The patient's condition seemed to be at a standstill, and he was permitted to go home. A few days later he died. This case showed the following symptoms: polyneuritic, polioencephalitic, psychotic, and myelitic.

Case III: H. R. (col.), age 19 (Hosp. No. 9123), brought in April 15, 1924, complaining with generalised pains. The pain started in the right leg a week before admission. From the leg it spread over the entire body, but was most intense in the extremities. Passive movement of the arms, legs, and neck caused considerable pain. She vomited frequently, and was unable to void.

On examination there were no pupillary changes or difficulty in speech. The neck was stiff, and the skin over the abdomen hyperesthetic. The bladder was distended up to the umbilicus. The tendon reflexes were absent; Babinski negative; Kernig positive. The urine showed a heavy cloud of albumin with considerable casts. The white cell counts were 35,800, 32,200 and 25,400;

the temperature around 100, pulse 110. The spinal fluid was under 15 m.m. Hg. pressure, cell count only 10, Fehling's reduced, globulins normal. The puncture and drainage of 12 c.c. of spinal fluid seemed to relieve the pains, and after that bladder control was regained.

This patient made a complete recovery after a few weeks. Her symptoms were classified as meningitic, polyneuritic, and myelitic.

Case IV: Mrs. W. O. J., age 43 (Hosp. No. 9439), entered the hospital June 29, 1924. Prior to May 28 of the same year, was perfectly well, but about 4 o'clock the morning of that day she was awakened by a severe pain in the left side of her head. Half an hour later she became nauseated and vomited. The pain continued severe, and spread down the neck to the back. A few days later she went into a semi-conscious state, from which she would be aroused by severe paroxysms of pain in the neck, back, and lower extremities. At that time here temperature ranged from 98 to 102.

She had been in this condition a week, when a lumbar puncture was done. The fluid was under 18 m.m. Hg. pressure, bloody, and when centrifugalized the supernatant fluid had a dark amber color, suggesting broken down cells of a previous hemorrhage. After the puncture she experienced considerable relief. Following this, however, she had a troublesome diarrhea and sweats. Three weeks after the primary onset, she had a return of the pains, spasms "of all the muscles," and a temperature of 102. She came in the hospital complaining with headache and soreness in her back. Her blood picture was normal. Her tonsils were diseased, and after removal the left was found to contain a large abscess. Following this operation she was relieved entirely of all pain, and has remained well since.

Classification of symptoms: Meningitic, polyneuritic.

Case V: W. L. H., age 40, (Hosp. No. 7750), came in May 7, 1923, complaining of weakness and inability to sleep

at night. Six weeks before admission, his eyes became crossed, and he would see double unless he closed one. A day or two later he went to see a doctor who found he had fever of 103. After this he showed delirium, a not unusual thing with fever. He slept very much, and would fall asleep with the thermometer in his mouth. After the fever left him, he was more sleepy and sluggish than before. For the last four or five days he had been restless. Would sleep during the day and not at all during the night. While asleep, he would have twitching of his muscles.

His physical examination was entirely negative save for a masque-like expression. The urine was negative, the white cell count 14,000, with 75 per cent, polys. A lumbar puncture was not done because all acute symptoms had subsided.

Classification of symptoms: Polioencephalitic, lethargic, Parkinsonian, and psychotic.

Summary: The five cases reported have some repetition of symptoms, but

are varied enough to give some idea of how many forms the disease may take. All presented symptoms which sooner or later directed attention to the central nervous system. All had fever, indicating an infection. The white cell count ranged from normal to 35,000. The spinal fluid was under normal pressure in one, and in another the count was normal; but in the four cases in which the fluid was taken, there was some abnormality. One of the five died. Three recovered completely, but Case V has been unable to return to work after a year of convalescence.

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Safety First Factors in the Tuberculous Surgical Patient.

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Patients with pulmonary tuberculosis are sub-standard surgical risks. The equilibrium existing between the resistance and the disease may be so disturbed through exposure, hemorrhage, shock and irritation from a prolonged or unwisely chosen anesthetic that a quiescent or a healed stage may become overwhelmingly active. Diffusion to previously uninfected fields may result from lowered resistance, mixed infection, or aspiration of sputum and secretions from the nasopharynx. In spread-

ing infection no organ begins to compare with the lung. After foci communicate with the bronchi, the way is open for their content to be carried to all parts of the same lung, to the opposite lung, to the larynx and in a more round-about way through the blood stream to any part of the body.

The points to be weighed after it is definitely settled that the surgical condition is a liability to the patient, is whether the condition can be handled surgically without sufficient detriment to overbalance the good effect. This decision can only be reached by a very close association between the man espec-

*Read before The Eastern Society of Anesthetists, at New York City, October 24, 1924.

ially trained to treat pulmonary tuberculosis and the man surgically trained to operate with the least possible trauma to the patient.

Determination of the class of risk in patients with pulmonary tuberculosis should be carried out from a general standpoint, as is done for every pre-operative case in any well conducted hospital. A complete physical examination should be made with renal and blood studies in the laboratory. Patients with absent or negative sputum have the better prognosis. The vital capacity and the results of breath-holding tests are of some value. The coagulation time of the blood and the "calcium" clotting time should be observed.

Greater attention should be paid to objective and subjective symptoms than to physical findings in the chest. A patient who is well poised, well nourished, having but little fever and no cyanosis or acceleration of pulse rate, even though he may have extensive lung involvement, is a much better risk for any stress than one who may have only minimal involvement but who has an unstable nervous system, emaciation and cyanosis with rapid pulse. The mental attitude toward operation should be considered as in mild cases of hyperthyroidism; the hypersensitiveness of the sympathetic nervous system may be similar and the metabolic rate may be increased to plus 20 or 30.

A physiological classification of pulmonary tuberculosis from the standpoint of prognosis is of more import than an anatomical classification. There may be two cases having apparently identical lesions, yet in one the pulmonary symptoms predominate while in the other the general symptoms are most conspicuous. The two patients while having the same disease will thus present totally different symptomatology.

In the records of every tuberculosis sanatorium may be found the histories of many patients who date the onset of tuberculosis activity to an operation, most frequently following tonsillectomies, under general anesthesia. This often could be avoided were there more

care in pre-operative and post-operative consideration of the general condition of the patient. It is quite natural that every specialist has a tendency to emphasize conditions that lie within his particular field and to slight those in others.

Acute tuberculosis is always the expression of re-infection, which occurs when there has been a lowering of the reserve resisting power of the host. The individual who has enough immunity to keep his chronic pulmonary process localized cannot be infected from without by tubercle bacilli alone. A "quiescent" focus can often be found if the pulmonary examination before operation is complete, and extension of the tuberculous process may be avoided if due consideration is given to the patient's delicate "balance of power."

The choice of the anesthetic and the skill and duration of its administration are vital factors in operations on patients with pulmonary tuberculosis. The anesthetist should be considered as a specialist on the operating team. No mechanical device can replace the sense of responsibility and constant watchfulness of the experienced anesthetist. In the selection of the anesthetic, the dominant consideration should be the safety of the patient during operation and the harmful after effects. The anesthetic itself may be the decisive factor against the surgeon's success, and should be one which, after a careful estimation of the tubercular risk, offers the greatest advantage to the patient.

Local or regional anesthesia would be the choice whenever possible to use it without too much handicap to surgical skill. When possible the patient's susceptibility to novocain should be tested a few days previous to operation. In doing artificial pneumo-thorax I have often observed slight collapse with a fall in blood pressure from the injection of a small amount of novocain. Eoesser and Brill warn against hypersusceptibility to novocain in the tuberculous patient, and Sangmann reported a death following the use of 190 c.c. of 5 per cent. novocain.

Of general anesthetics for the tuberculous patient, nitrous oxide-oxygen has been most frequently employed in the past. Due to the fact that complete muscular relaxation is seldom obtained and because of its tendency to cause asphyxia, rise of blood pressure, disordered and irregular breathing with resulting aspiration of the secretions of the nasopharynx, nitrous oxide is not ideal as a general anesthetic. Gerald Webb, of Colorado Springs, says that gas-oxygen may often be followed by an acute upset if used in tuberculous cases. It is his rule to avoid, in every way possible, any operation requiring inhalation anesthesia in acute tuberculosis.

Ether may be given with safety in healed minimal tuberculous cases. When given, the open method should preferably be used, since patients with tuberculosis are very intolerant of air limitation. In reply to over a hundred questionnaires sent by Eastman to anesthesiologists, surgeons, and internists especially interested in tuberculosis, it was of interest that the anesthesiologists and tuberculosis experts to whom communications of inquiry were sent, were, with few exceptions, more or less opposed to the administration of ether in the tuberculous. Pattenger believes that ether exercises a solvent effect upon the lipoids of pulmonary cells. Chloroform should not be used because of its depression of the heart and tendency to toxic after-effects resulting in lowered tissue resistance. It has been shown that chloroform diminishes the oxygen capacity of the blood for twenty to twenty-five days after administration.

The new ethylene-oxygen general anesthetic offers greater hope for surgery in the tuberculous patient. The ease and rapidity with which anesthesia is induced by ethylene-oxygen is most striking. There is no apparent increase in the secretions of the nasopharynx or upper respiratory tract, there is absence of struggling and disordered breathing with lessened tendency to asphyxiation, and no cyanosis. More oxygen can be given with thylene than with nitrous oxide, because ethylene is the more po-

tent. There is no diaphoresis, hence no tendency to chilling with loss of body fluids as with the other general anesthetics. Because of the lessened tendency to post-operative nausea and distention, nourishment can be given earlier. In a recent consecutive series of 450 anesthetics with ethylene-oxygen at St. Elizabeth's Hospital, Richmond, there was not a single case of post-operative respiratory complication which could in any way be attributed to this anesthetic.

In all cases, the operating room should be at a proper temperature, and all appliances for dealing with shock and the accidents of anesthesia should be at hand. The patient should lie upon the affected side when possible and pre-operative mouth wash and gargle is good prophylaxis against post-operative bronchitis and pneumonia. Calcium chloride should be given intravenously if the clotting time of the blood is delayed.

It is often the complications and associated diseases that demand the greatest attention in tuberculosis work.

I am reporting the following cases to illustrate the successful treatment by surgery of associated conditions in tuberculous patients, which conditions might have proven fatal handicaps in their progress.

Case I.

Miss C. F., female, single, aged 42 entered St. Elizabeth's Hospital November 28, 1923, with a history of having had tuberculosis for four years. The chief complaint was "intestinal trouble." The pre-operative diagnosis was tuberculous salpingitis and peritonitis with partial obstruction. Briefly, her physical examination indicated a well poised, well developed and well nourished woman about middle age. Skin and mucous surfaces were slightly pale. Her maximum evening temperature was 100.5° F. She had retained no nourishment and but little water for three days prior to admission.

Heart: Apex impulse in the fifth intercostal space 10 c.m. from the midline. All sounds were of good quality, and

there were no murmurs. The pulse was 90 per minute and regular in force and rhythm. The blood pressure was 108/84.

Lungs: The physical examination and roentgen-ray showed evidences of extensive tuberculous lesions at both apices with a large cavity at the right apex. About half of the infiltration appeared unhealed.

Routine blood examination showed a mild secondary anemia. The coagulation time was 4 minutes. The Wassermann was negative. Urinary examination was negative except for a trace of albumin. Intravenous kidney function test showed an elimination of 62 per cent. of phenolsulphonephthalein the first hour. Sputum showed many tubercle bacilli.

The patient was digitalized by the Eggleston method during forty-eight hours previous to operation, which was done by Dr. J. Shelton Horsley under local and ethylene-oxygen anesthesia. There was a considerable quantity of yellowish free fluid in the abdominal cavity which was removed by a suction apparatus. A papillary cyst adenoma of the right ovary, of low grade malignancy, which extended to the level of the navel and was adherent to the small bowel, was removed. The operation lasted one hour and twenty-five minutes; the general anesthetic lasted one hour and five minutes. The patient was able to take fruit juices the second day after operation and her recovery was uneventful. The physical signs of tuberculous activity were less six weeks after operation than before operation, her temperature was normal, and cough and expectoration were less. Three months from the time of the operation she was up most of the day, had practically no cough, no expectoration, weighed more than eight months previously, and the physical signs in the chest indicated steady improvement. Later she succumbed to a recurrence of the ovarian growth.

Case II.

M. S. D., female, widow, age 29, was admitted to St. Elizabeth's Hospital February 11, 1924, with a history of having had tuberculosis for one year. There was a minimal tuberculous involvement of the upper lobe of the left lung and a complete collapse of the right lung by pneumothorax for advanced involvement. The physical examination showed a poorly developed and poorly nourished woman of small stature. The face was flushed and mucous surfaces well injected. There was slight jaundice. The temperature was 101° F. The diagnosis was acute cholecystitis.

Heart: Apex impulse in the sixth intercostal space 12 c.m. from the midline. All sounds were of good quality. The pulse was 132 per minute, and regular in force and rhythm. The blood pressure was 105/60.

Laboratory Examination: Routine blood examination showed that the white blood count was 14,800, polys. 88, and hemoglobin 80 per cent. The coagulation time was 3½ minutes. The Wassermann was negative. The sputum showed many tubercle bacilli. Urine was negative except for bile, a trace of albumin, and acetone.

A gall-bladder drainage was made under local anesthesia by Dr. J. Shelton Horsley. There was but little shock from the operation, the patient retained liquid nourishment on the next day, and there has been steady improvement in her general condition since the operation.

Case III.

Mrs. C. E. W., age 30, was admitted to St. Elizabeth's Hospital on June 20, 1924. The patient had moderately advanced tuberculous activity of the right lung, and minimal of the left lung.

Physical Examination: The patient was of "nervous" temperament. She was well developed and nourished. The skin and mucous surfaces were pale. The maximum evening temperature was 99.4°.

Left border was in the fourth intercostal space 9 c.m. from the midline. All

sounds were of good quality. Blood pressure was 122/70. The pulse rate was 110 per minute, and the pulse was regular in force and rhythm.

Laboratory Examinations: Blood examination showed the hemoglobin 60 per cent., red blood cells 3,220,000, and white blood count 8,240. The Wassermann was negative. The coagulation time was five minutes. The urine was negative except for albumin 2-plus. The phenolsulphonephthalein excretion was 70 per cent. in two hours.

She was eight months pregnant and came to the hospital for a Caesarian section and resection of the Fallopian tubes. A hypodermic of scopolamin, grain 1/100, with morphine sulphate grain 1/4, was given a half hour previous to the operation which was to have been done under local anesthesia and ethylene-oxygen. The patient "fainted" as she was placed on the operating table, and the operation was postponed for five days and was done under ethylene-oxygen anesthesia.

The patient's maximum temperature was 101° for two days following the operation and then dropped to a minimum of 99.2°, and there was an uneventful recovery from the operation. Twenty days later she developed a "cold" which was followed by a lobar pneumonia of the left lower lobe, from which there was a complete recovery. Physical and roentgen-ray examination of the chest two months from the time of the operation did not show any advance of the pulmonary lesions and the general condition of the patient was entirely satisfactory.

With better histories, better studies, and interpretation of progress or retrogression, more frequent roentgen-ray plates, and with the advances of surgery and anesthesia, it seems likely that more cases of pulmonary tuberculosis may be

removed from the expectant care method of treatment and assisted actually toward permanent cure. In a disease in which the clinical entity is nearly always secondary to the stress of environmental influence or to the handicap of intercurrent disease, too much emphasis cannot be made in regard to the treatment of associated pathological conditions.

Tuberculous dyspeptics should be subjected to gastro-intestinal surveys as early as possible in the course of the disease. Digestive disorders should receive proper treatment promptly not only to aid the recovery from the pulmonary disease but to avoid secondary localization of the specific infection in the digestive system.

Since rest and nutrition are the chief factors in treating tuberculosis, any operation, as for gall-bladder disease, gastric ulcer, or appendicitis, which will relieve indigestion and promote assimilation of food with a minimum of danger from the operation, is a great aid in treating the tuberculous patient.

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Renal Disfunction: Its Relation to General Surgery

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The practical experience of the average general surgeon has taught him to consider very seriously the role of the renal function and the part this function, if disturbed, may play in the ultimate outcome of the surgical problem at issue. It might be of particular value for us to refresh our minds on the problem of renal disfunction and its significance in the handling of surgical problems. It is not the purpose of this paper to consider the specific anatomical disturbance of the kidney or the fixed renal pathology; but, on the other hand, to apply the problem of renal disfunction to the various complicated surgical problems which confront the surgeon in his routine. From the vast amount of laboratory data now available it may be assumed that the principal function of the kidney is to keep the composition of the blood chemically constant, and, in order to accomplish this, the kidneys must respond to the various deviations from the normal composition which takes place in the average metabolic routine. This is accomplished by the excretion of water and substances dissolved in water. In the accomplishment of these feats work is done by the kidney, and the various functional tests now at our command merely measure the capacity of the kidney for work. The practical application of distilled water to a crippled kidney is brought out by the fact that the excretion of simple distilled water does not require as much work by the kidneys as is required for the elimination of solids such as urea, uric acid, etc. Hence by increasing the water intake and making the kidneys excrete a less concentrated urine the same amount of waste products may

be excreted with less work by the kidney.

It is not always easy to place the proper value on an associated renal disturbance which complicates a general surgical problem, and harder still to evaluate the significance of the various renal functional tests. We must remember that an associated renal disfunction in a general surgical condition is complicated by various changes that take place in the course of the disease, and any deduction drawn from the various tests to measure renal function must be applied to the diagnosis and the prognosis in a practical manner, remembering always that these tests indicate only a disturbed function, without proving a specific anatomical lesion. Longcope says, "All attempts to distinguish by functional tests types of pathological lesions in kidney disease have failed, and efforts to correlate functional derangement with pathological alteration found at autopsy have been unsuccessful." In a further consideration of the estimate of renal function, we must remember that the excretion and retention of chlorides, water and nitrogenous substances may be influenced by metabolic processes in the cells and tissues, and, therefore, cannot always directly be taken as measures of renal activity.

Since the early work of Didal and Javal showed the relation of chloride retention to the edema of nephritis, numerous tests have been devised to estimate the state of renal function. Experience with these various tests has been so extensive that we are now in a fair position to draw some conclusions regarding their value and to choose wisely the ones to adopt for daily use. The ones from which we have derived the greatest satisfaction and which have given uniformly reliable results are three, which are as follows:

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First; an estimation of the phthalein excretion; second, the determination of the concentration of the constituents of the blood; and third, the urine concentration test or the test meal of Christian's modification. In reality in daily routine we have only found of practical use the phthalein excretion test and the further information to be derived from the non-protein nitrogen concentration. With regards to phthalein excretion, we do not know exactly how to measure this test for it is an established fact that the liver has a definite affinity for the dye and if much of it goes through the this organ, the quantity eliminated through the kidney is so variable as to make it unreliable as a guide. We therefore feel that the phthalein excretion measures directly some functional activity of the kidney, but believe that certain reservations are necessary in accepting the interpretation of the test. However, a progressive diminution of phthalein indicates a severe and progressive injury to the kidney. Of blood chemistry the features of importance are the determination of the urea, the total non-protein nitrogen, uric acid, creatinine and carbon-dioxide combining power of the blood. Of these we employ almost exclusively the urea nitrogen estimate, creatinine and the carbon-dioxide combining power of the blood, believing that these simple tests will tell us all that the other combined tests might contribute in the way of information.

In our surgical work we have endeavored to establish some basis of understanding with regard to the significance or relationship of renal upset and the predominating surgical condition. It has been our deduction that, in the adaptation of the results of these various tests when applied to associated renal disfunction, the degree of functional reduction is not necessarily commensurate with the extent of actual destruction of renal tissue. In considering a general surgical problem with an associated renal disfunction, the principal aid to be derived from the various renal functional estimations is in the question of prog-

nosis. The fundamental weakness of all renal functional tests as an aid to prognosis is the varied ability of the kidney to perform work and the amount accomplished in relation to the time of the making of these tests. The kidneys do not excrete at a constant speed, and, therefore, one estimation of the renal work cannot convey entirely reliable information. Furthermore it is now well known that one kidney will do more work than the other in a given time period, whereas the weaker functioning kidney may make up the difference in the course of a period of twenty-four hours of activity. Thus at the time of examination the renal functional test may show a certain degree of functional activity, but one cannot estimate from these tests what the functional capacity for work may be at a later cycle or after the associated pathological conditions are corrected. In making a diagnosis one of the greatest values of the renal test is in the establishment of a specific lesion of one kidney. Here the urea nitrogen estimate in the blood and the phthalein excretion through the kidney is of inestimable value. In locating a lesion, however, in one or the other kidney, we cannot rely on a slight functional difference in the phthalein output. The comparative difference in the functional output must be marked to have any diagnostic value or significance. Where renal disfunction is suspected the importance of determining the non-protein nitrogen constituents of the blood as a pre-operative precaution should be strongly emphasized. It has been concluded by able men and great clinics everywhere that urea is the most helpful single constituent to determine and urea nitrogen estimations are the easiest of these to do. Where there is a persistent increase in the retention of the urea nitrogen of the blood we may safely infer that we have a pronounced bilateral renal disturbance, and there are other surgical conditions, in the nature of general surgical problems, in which the non-protein nitrogen determination in the blood, the phthalein excretion test and the creatinine and cor-

bon-dioxide combining power of the blood lend valuable aid in prognosis, and particularly in treatment. We have long since known that in specific toxemias, such as lead poisoning, acute mercury poisoning and conditions of similar nature, that the non-protein nitrogen constituents of the blood are markedly increased; and I think we might pass over these conditions with just this brief comment. On the other hand one of the commonest remediable conditions giving renal disfunction and associated with some serious surgical problem is that of cardiac insufficiency. I believe, generally speaking, that in all of our renal disfunctions we will find that cardiac insufficiency is more commonly the cause of the renal disturbance than renal lesions per se. In an analysis of one hundred consecutive cases in patients past 40 years, showing evidences of renal disfunction, we found that cardiac insufficiency predominated, giving a percentage of sixty over all other clinical causes which contributed to renal disturbance. In our opinion congestion of the kidney with its associated renal disturbance is too seldom recognized as a contributing factor to some serious surgical problem. We should be familiar with the fact that with a passive congestion of the kidney associated with a low blood pressure, we will invariably get considerable albumen and casts in the urine, often a marked oliguria and frequently a hematuria. Under these conditions it has been found experimentally, and confirmed clinically, that phthalein excretion of the kidney is materially reduced, and the non-protein nitrogen or urea of the blood distinctly elevated. Thus our estimation of renal disfunction, when properly interpreted, makes correction possible by proper treatment, and often materially influences the prognosis of a surgical case.

Intestinal obstruction offers another most interesting field for the study of an associated renal disfunction and its relation to both prognosis and diagnosis. Many years ago Whipple and his associates demonstrated, in an experimental

intestinal obstruction, that a test of renal function indicated a diminished phthalein output and a sharp rise in the blood urea. This was proven to be a purely functional disturbance, as the examination of the kidneys did not disclose any demonstrable lesion. These findings have been corroborated repeatedly in the literature, in the clinical course of intestinal obstruction in the human, and it has now become a routine in many hospitals and clinics to utilize the determination of renal function as an aid in the proper diagnosis of obstruction. With relation to general surgery this offers a useful field when applied to the question of post-operative obstruction. Renal upset and its relation to an acidosis or intestinal obstruction is not always easy to determine. Failure of the kidney to concentrate, with a retention of the phosphates and an increase in the carbon-dioxide of the blood, will aid materially in establishing a diagnosis of an acidosis; whereas a marked increase in the blood urea and the non-protein nitrogen, with a definite diminution in the phthalein output should aid materially in solving the problem. I once saw this applied to great advantage in a case where both ureters had been ligated in the course of a hysterectomy. You all recall that the principle clinical symptoms of a double ligation of the ureter are those of intestinal distention, crampy colicky pains, nausea and vomiting, which are all more suggestive of an intestinal obstruction than any other one possible existing trouble. On the other hand, with a failure to get urine from the bladder and a marked increase in non-protein nitrogen and urea in the blood, the diagnosis in this particular case was immediately accorded to the ligation of the ureters, and this was established by cystoscopic examination.

In serious malignant conditions we often have an associated renal disfunction, and, where this is due to metastasis, the explanation, if established, is sufficient to guide us in choosing surgical measures. On the other hand in many malignant conditions, we have a

general encroachment with toxic absorption from an associated infection, and here we frequently find a sharp rise in the blood urea and the non-protein nitrogen of the blood when there are no definite anatomical lesions in the kidney. Therefore, discriminating use of the phthalein excretion test, and often one or more cystoscopic investigations, will disclose a transient renal disfunction and permit us to rule out the question of anatomical lesion. In acute infection in surgical problems we are often confronted with the presence of large amounts of albumen and casts in the urine, but experience in the study of these cases has taught us to feel that the presence of albumen and casts in these conditions is largely due to the toxins present and that the function of the kidney is not materially deranged. In fact it is rare to find in these cases any functional derangement as evidenced by a diminished phthalein output or an increase in the urea or non-protein nitrogen of the blood. It has been demonstrated in a severe acute infection with an overwhelming toxemia, such as we get in pneumonia, that there is a definite rise of the urea and non-protein nitrogen of the blood and often a decided decrease in the excretion of phthalein.

The surgical relationship between blood transfusion and renal disfunction is of material importance. There have been a number of cases reported in the literature in which, following transfusions of citrated blood there have been marked reactions, such as a rise in temperature, abdominal pain, vomiting and fall of blood pressure, and, following these early reactions, there have been found a sharp increase in the blood urea and non-protein nitrogen constituents, a marked increase in the uric acid and a definite fall in the phthalein excretion. This condition of disfunction usually exists for ten to fourteen days and then gradually clears up. We also know that in severe anemias, especially protracted secondary anemia and pernicious ane-

mia, we have definite evidences of renal disfunction through the study of the renal test meal. In these severe anemias we commonly note an impairment of the ability of the kidneys to concentrate the urine, and it is highly probable that some disturbance of the heart muscle, with a resulting chronic passive congestion, is the principal operating factor in the production of the renal disturbance.

One of the commonest surgical conditions requiring the proper interpretation of the results of the renal function tests is that of enlarged prostate or other tumors of the bladder. Renal disfunction in one or another degree is commonly found in tumors of the bladder and has a most important bearing on both the prognosis and the treatment. I think we all have about come to agree that renal disfunction associated with enlargement of the prostate is entirely a problem of mechanical obstruction, and, by some method of gradually relieving this obstruction we can often correct, or materially overcome, the existing renal disfunction.

In a study of the last fifty consecutive prostatectomies done, we have found that the question of renal disfunction was of material importance only in those cases where there was residual urine or where there was the history of a previously existing nephritis for many years. In those cases having residual urine we invariably found the phthalein excretion markedly diminished, and in proportion to the amount of residual urine and the duration in time of the existence of residual urine. The urea nitrogen, however, did not show such a marked difference from the normal as did the phthalein excretion, and we found that those cases whose urea nitrogen retention did not exceed 25 milligrams to the 100 c.c. of blood were perfectly safe risks from an operative view point. We, however, followed the rule that, where the urea nitrogen was increased above 20 milligrams to the 100 c.c. of blood, a preliminary suprapubic drainage of the bladder is the safest way of handling these cases. When the urea

nitrogen was not above 20 milligrams and the phthalein excretion was as much as fifty per cent in two hours, we have felt that a properly executed one stage prostatectomy could be safely undertaken. In nine of these cases the phthalein excretion fell below 20 per cent in two hours and the urea nitrogen averaged between 28 and 34. In these nine cases long preparation with suprabubic drainage for a period of three or four weeks made the necessary operative procedure entirely safe, and, through the study of the renal function, we were able to operate on these fifty consecutive cases without a mortality.

It is not within the premise of this paper to consider individual pathological lesions of the kidney, but in handling specific kidney conditions there is a very definite relationship between a given surgical problem and what we speak of as renal reserve, renal compensation and renal hypertrophy. If we measure this by our ordinary routine of renal functional tests, such as the phthalein excretion, the urea nitrogen of the blood and the amount and concentration of the urine, we usually find that the normal kidney is about equal to the task of carrying on double its amount of normal work, and the general clinical supposition is that this ability to do double work is dependent upon the native reserve power within the healthy kidney. This we have observed to be true in many instances where the individual has successfully weathered a nephrectomy with no marked functional disturbance. If we follow these cases carefully we will, however, find that in the first two or three days after nephrectomy there is a marked diminution in the excretion of phthalein and a corresponding rise in the urea nitrogen of the blood. The urea nitrogen retention does not approach the normal until some time between the eighth and fourteenth days, but the phthalein excretion often comes up to within normal limits around the fifth or sixth day. This condition prevails under normal stress and normal load, and if an over load is

put on the kidney its insufficiency is at once apparent.

The clinical importance of this observation is at once apparent, and this brings forward the conclusion that a normal kidney, after the removal of its mate, is not at once able to carry on the total necessary function, but becomes competent through its reserve and the inherent ability of the renal structure to develop a compensatory hypertrophy. It often happens, however, that compensatory changes do not occur because of the fact that the renal tissue is already working to the height of its ability, and this failure of the reserve to establish a counter balance will be indicated by a renal insufficiency as determined by our functional tests.

The clinical significance of renal compensation and the problem in relation to surgery is made all the more confusing by the recognition of what is commonly spoken of as a disuse atrophy. From experimental work on the kidney we have for a long time known that increased function usually means a compensatory hypertrophy, whereas a decrease in function usually indicates a disuse atrophy. This is of tremendous importance where the surgeon is dealing with unilateral or bilateral disease of the kidney. Generally speaking, it is of no avail to attempt to repair or preserve a unilateral injury where we have on the other side a healthy and complete compensatory hypertrophy; thus nephrectomy would be indicated in a pronounced infection of one kidney where function has completely ceased and a full counter balance has been established in the other kidney as evidenced by a complete compensatory hypertrophy. The importance therefore of recognizing a unilateral renal disfunction and its repair if possible before a disuse atrophy occurs is paramount. It is also a law in renal surgery that the greatest consideration should be given to the preservation of renal tissue whenever bilateral disease is present, and we should interpret this as meaning the necessity for bilateral operation without too great length of time intervening between the operation

on the first and the second kidneys, lest in this intervening time, a compensatory hypertrophy may develop on the corrected side and, through competition, bring about a disuse atrophy on the other side. The problem of renal disfunction and its relation to general surgery is a big and broad subject. Disturbance of function as measured by exact chemical methods is not indicative of a specific anatomical lesion. Such estimation alone may mean something or nothing,

but when considered as part of a disease process we may often gain valuable information from this source. It must always be kept in mind however, that the true significance of renal function tests can only be properly interpreted when correlated with the rest of the clinical picture and in no way do they permit us to do away with a good history and a thorough physical and clinical examination.

Sterility in Women

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Case Reports of Pregnancy Following the Rubin Test for Patency of the Fallopian Tubes.

Sterility is a condition that has been studied for at least two thousand years. All normal females wish offspring, and it is usually the woman who first consults the physician to learn why the stork has not visited her home. It is therefore the woman who falls prey to many operations without complete examination and diagnosis of her condition. Unfortunately such treatment sometimes renders a normal woman permanently sterile. In many cases the real trouble lies in the male. Therefore, no examination of a woman for sterility is complete without a study of the male.

As in the diagnosis of any other condition, the history is very important. Special inquiry should be made into the history of mumps, the onset of menstruation, the frequency, amount, duration and character of pain. Appendicitis, surgical operations, leucorrhea or pelvic inflammation should also be considered. Tactful efforts should be made to learn something of the sexual relationship, (both male and female) including desire, frequency, presence or

absence of orgasm, painful coitus, withdrawal, and the use of contraceptive methods.

The woman is then studied generally. Special attention is paid to the blood picture, Wassermann reaction, focal infection, nutrition, vigor, hypo- or hyper-thyroidism and secondary sexual characteristics. The reproductive organs are considered in detail; the appearance and condition of the vulva, the escape of pus or mucus, appearance of vaginal mucus membrane; the size, color, position and consistency of the cervix: external os; open or closed: cervical canal; open or closed: the uterus; size, shape, position, consistency, mobility, and tenderness: the tubes; enlarged, tender, patent or non-patent: ovaries; large, small, cystic, position, tenderness. When this study is complete, an appointment is made to see the patient two hours after coitus. At this time a study of the spermatozoa in the cervical mucus is made. The specimen is taken on a warm slide (better a warming chamber) and studied under the low and medium power lenses, noting the size, shape, number, motility and speed of the spermatozoa. If the sperm do not pass a satisfactory examination, the husband should be studied. His his-

tory should include mumps, orchitis, injury to the genitals, venereal diseases, epididymitis, sex habits and occupation.

Examination includes a study of the penis; testicles,—large, small, undescended; prostate, seminal vesicles, prostatic fluid, and Wassermann reaction. If the sperm were not satisfactory in the cervical mucus, examine them directly from a warm condom. This examination of the male is best done by a urologist.

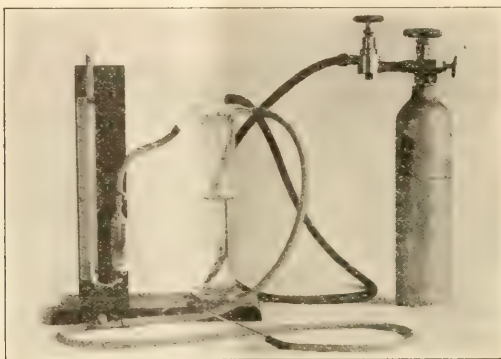
menstruation or if uterine or pelvic inflammation exists.

CASE REPORTS.

Mrs. J. F. H.—Clinic No. 227—March 26, 1924—Married 4 1-2 years—Para 1: Stillborn.

Menstrual History: Began at 14 years; recurs every 28 days; lasts three to four days; amount of flow moderate; no pain; 3 napkins daily; last period March 17, 1924.

Chief Complaint: Sterility and sore-



Apparatus used for testing the Patency of the Fallopian Tubes

The tubes are tested by transuterine insufflation using a modified Rubin apparatus. The apparatus consists of a carbon dioxide cylinder and finely adjusted control valve, 40 c. c. flow meter, mercury manometer and intra-uterine canula as indicated in illustration above.

The patient is prepared as for any intra-uterine manipulation. The canula is passed into the cervical canal and adjusted to prevent any leak. The gas is gradually allowed to flow and the mercury column rises. In patent cases, the mercury goes to 120 or 150 and drops back to 80. The gas can be heard passing into the abdomen by listening above the pubes, and on assuming the erect posture pain develops in the patient's shoulder. In non-patent cases the mercury rises to 200 m.m. (the limit). The test should not be used in or near the

ness in right side. The patient was delivered September 1920 of a well-developed child whose heart rate was 90 to 100 per minute. Artificial respiration failed to make the child breathe and death was attributed to cerebral hemorrhage. About 10 days after delivery the patient developed acute right-sided pyelitis that yielded to simple treatment. This was followed by stricture of right ureter and ureteral dilatation was resorted to. No contraceptive methods used since delivery. Patient now complains of infrequent attacks of pain in right lower abdomen. Has slight blood-stained vaginal discharge at times.

Examination: Heart, lungs, and blood pressure normal. Mouth and nose negative except unerupted third molar. Tonsils questionable. Urine: light cloud albumin, no casts.

Pelvic. Vaginal outlet closed, no

hernia, vaginal secretion acid, cervix posterior, external os open, sound stops at internal os. Cervical mucus alkaline. Uterus normal size, anteфлекed, displaced slightly to the left.

Abdomen: Moderate tenderness on deep palpation in right lower abdomen. Back, no sacral or kidney percussion tenderness.

Sperm Test: Sperm active in cervical mucus two hours after coitus. Tubal patency test, April 9, 1924; mercury rose to 100, fell back to 60 and remained there. Gurgling was heard above the symphysis and pain developed in the right shoulder on assuming the erect posture. During and after the test there were pain and soreness in the region of the left tube (possibly occluded). The patient was given ovarian and thyroid extracts, but the latter produced considerable nervousness and was necessarily stopped. Both April and May menstruations were normal. Amenorrhea developed in June, and on August 15th she was 2 1-2 months pregnant. Abortion took place later following some indiscretion.

Mrs. J. P. H.—Clinic No. 251—May 9, 1924—Age 26.

Chief Complaint: Sterility.

History: Menstruation began at the age of 14. Recurs every 28 days, lasts 3 to 4 days. No pain. Moderate flow. Last period April 25. Para one. Married May 1920 and conceived October of same year. Premature labor without apparent cause April 1921. Since that time there has not been any contraceptive method employed other than an occasional plain water douche. No history of pelvic inflammation. Cervix, mid-position. External os open. No erosion. Cervical mucus neutral. Vaginal mucus acid. Tubes and ovaries apparently normal on bimanual palpation. Uterus retroposed.

Tubal Patency Test July 1, 1924: Mercury column rose to 85 and dropped back to 40, and remained there while the gas flowed. Gas could be heard through the stethoscope when resting over the lower abdomen. When assuming the erect position there was distinct pain in the right chest and shoulder.

Conclusions: Tubes patent. Moderate retro-displacement of uterus. Sug-gest knee-chest position and insertion of pessary.

Sperm Test: Sperm active in cervical mucus 1 1-2 hours after coitus. Hodge pessary inserted and uterus lifted to normal position. May 17, pessary causes constant pain except on sitting or lying. No irritation of bladder. Uterus anteфлекed and pulled to the left. Pessary removed, knee-chest ten minutes twice a day. Last menstruation September 15th. Patient conceived following this period, and December 1st, 1924, she was two months pregnant.

The treatment of sterility consists in making accurate diagnosis and correcting the abnormality. Some of the commoner conditions met with are:

Endocervicitis with the development of abnormal mucus and pus. This is often well treated by intra-cervical application of iodine. Any erosion should be cauterized and healed with chemical or actual cautery.

A tenacious plug of mucus obstructing the external os may hinder the passage of spermatozoa.

The vaginal secretions are normally acid, but an acid cervix may devitalize the sperm and prevent conception. In such cases, an alkaline douche should be taken before coitus.

A closed cervical canal should be dilated but any cervix that will admit a sound to the uterine cavity will certainly admit spermatozoa and dilatation is unnecessary.

When a woman is menstruating regularly every twenty-eight days with a normal amount of flow and there is no sign of overgrowth of endometrium or insecure implantation of the ovum, curettage is contra-indicated. If, however, there are signs of hyperplastic endometrium, excessive bleeding at each menstruation, or if the patient has on several occasions gone a few days over time, followed by heavy flow with clots, indicating the casting of an insecurely implanted ovum, a gentle light curettage may be indicated (Bandler). The indiscriminate D. & C. to help a woman conceive is unscientific, and to be con-

demned. It has probably produced more sterility than it has remedied.

Effluvium seminis, a condition usually due to relaxed vaginal outlet, is not a real barrier to conception. Although a large amount of semen appears to escape, there is usually enough left to impregnate many ova. This condition can only be considered a contributing factor. Relief is best obtained by assuming the knee chest position immediately after coitus.

Retro-displacements theoretically are a cause for sterility, as the os is tilted out of the seminal lake, and the suction like action of the cervix loses its chance to draw up the semen. However, we know that many women with chronic retroversion conceive time after time, while others do not conceive with retroversion, nor do they conceive if the displacement is corrected. Retroversion, though, is a contributing factor in sterility and should be corrected.

Myoma uteri may or may not be a cause of sterility as some women conceive following removal, and others do not. If menorrhagia exist, this may prevent the embedding of the ovum.

Anteflexion and stenosis in our experience has been found most often in the slightly obese women with scanty menstruation. In these individuals the uterus is often small, and this under development probably plays a great part in the lack of fertility. In these cases, glandular therapy may be of service and especially thyroid extract. Electrical stimulation also may aid in developing a normal uterus. However, if the uterus is definitely of the infantile type, sterility will probably remain permanent.

Coitus should be somewhat regulated, and should certainly take place just before and just after menstruation, this being the most opportune time for fecundation.

A sedentary life, particularly on the part of men, often plays a role in sterility. It has been demonstrated by Rey-

nolds Macomber and Dabney that changing the daily activities of certain husbands from indoors to outdoors is followed by impregnation of their wives.

Again Reynolds and Macomber have shown in the laboratory that animals (rats) fed on a diet low in fat soluble vitamins are 50 per cent sterile, and those with reduced calcium have a greater percentage of sterility. Their findings are substantiated by the clinical fact that in Austria and other Central European countries where a very deficient or war diet is in use, the birth rate is lower, and sterility is very common.

Non-patent fallopian tubes are a positive barrier to conception. Some women who are temporarily sterile due to plugs of mucus in the tubes or soft fine adhesions may be cured by the tubes being opened at the time gas is forced through them in testing their patency. We have had several sterile patients to conceive following the patency test. If, however, the tubes are grossly sealed, an operation is necessary and the results are often unsatisfactory.

Ovaries of the cystic type can, according to Bandler, be made to give off healthy ova by removing the diseased portion.

Pelvic inflammation, a very important part of the study of sterility, may at any time during the life of a female play havoc with her reproductive capacity. The female from her earliest infancy should be guarded against this disastrous disease. Vulvovaginitis in the first week of life may permanently seal the tubes. Any contagious disease or focal infection may be the origin of a pyogenic metastasis to the pelvis. Mumps, with its selective affinity for the ovaries, may destroy these important organs. Tuberculosis is often diagnosed by finding that it has destroyed the fallopian tubes. The ever present "nigger in the wood pile," the vermiform appendix, is a constant menace and

a frequent cause of destructive pelvic inflammation.

Any mother who voluntarily exposes her child to mumps or any other contagious disease (as they often do to get it over with during childhood) does not understand what havoc she may be playing with the reproductive function and the unhappiness that may follow.

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Back and Leg Pains

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A problem which frequently presents itself to the general practitioner for solution is the treatment of a patient with pain in the back, at times extending into the legs.

This has always been an important question in medicine, and, I fear, one too inadequately considered. Its importance is all the more emphasized because of its relation to industry. Probably at no period has so much attention been given to pain in the back as is being given to it at present. This has been largely brought about by the development of the spirit of justice to the working man, injured in the course of his labors, as exemplified in the enactment of the various Industrial Compensation Acts and in the establishment of Industrial Insurance.

Full justice, not only to the working man, but to his employer as well, demands a thorough study of the pathology attendant upon industrial trauma, as well as a study of the immediate and contributing causes to the production of that pathology. Such thorough and searching studies have been made. It is the purpose of this paper to direct attention to the anatomic and pathologic changes that give rise to pain in the back, which at times may extend down into the legs. There will be no attempt made at discussing pain in the back arising from pathology in the abdominal or pelvic viscera.

It is hoped this paper will bring forcibly to our attention the fact that there

are many causes for pain in the back, and that in any given case we should make a diligent effort to seek them out, that the patients may have the benefit of more intelligent treatment.

There are many anatomic anomalies in the structures of the back, some of which may never give rise to symptoms. On the other hand, they may essentially predispose to disabilities, following trauma, that otherwise would never exist. They will be discussed more fully later. These anomalies may involve the vertebrae, the ligaments or muscular structure, or the ribs.

There may be an excessive number of vertebrae; there may be too few. Such deviations from the normal are usually seen in the lumbar region, there often being, in the heavy anatomic type of person with short torso, but four lumbar vertebrae, while in the thin, tall type with a long torso, six lumbar vertebrae may be found. Generally speaking, there is no pain or disability arising from such condition, per se. However, because of the naturally restricted motion where there are but four vertebrae severe flexing strains or severe torsion strains are prone to produce more damage to ligaments, laminae, transverse processes, articular facets and spinous processes than in the normal individual. On the other hand the persons with the excessive number of vertebrae have a greater range of flexibility and by virtue of such, place the spine in a compromised position which conduces to greater

probability of injury.

There may be anomalous formations of the vertebrae; a lumbar vertebra may be of the thoracic or even of the cervical type. This is occasionally seen in the case of the fifth lumbar. The design in the two types, for combatting varying stresses and strains, is so marked, that it is obvious that fractures of such a lumbar vertebra would not be uncommon.

We see vertebrae with unusual angles of inclination of their articular facets. In some the articular facets are practically perpendicular and as such markedly limit lateral flexion without pain. Some may be vertical on one side and have a marked inclination on the other side, thus giving a free range of motion on that side. Those with more or less perpendicular facets will show a larger percentage of fracture of the facets following trauma because of that limitation of flexion.

Some vertebrae have unusually long transverse processes on one or both sides. In such an instance in the case of the first lumbar, if there be associated abnormal inclination of the twelfth rib, there will be either constant pain, or pain on flexion, due to impingement of the intercostal nerve. Again in the case of the fifth lumbar there may be impingement of the transverse process against the crest of the ilium, or impingement of the bursa so frequently interposed between them. In time a chronic bursitis will be set up. Impingement of this bursa is often encountered when there is a sacralization of one transverse process of the fifth lumbar, the impingement occurring on the opposite side.

Abnormal length or abnormal inclination of the spinous processes of the vertebrae or a combination of both gives rise to pain on extension or hyperextension of the spine due to impingement of the processes, or of a bursa between them. The overlapping of the spinous processes is responsible in large degree for the torsion and lateral curvature so often seen.

The position of the sacrum with reference to the crest of the ilii is often an

important factor in producing painful back. This is more particularly true because of the influence it has in determining the position of the fifth lumbar with reference to the ilii. If the sacrum be abnormally high it places the lumbar vertebrae high above the crests and permits a greater range of motion of all the lumbar vertebrae with consequent peril to the ilio-lumbar ligament on each side. If it be placed very low it submerges the fifth lumbar below the crests and limits lateral flexion and conduces to impingement of the transverse processes on the ilii.

Except for the ilio-lumbar ligaments, rupture of the ligamentous structures is comparatively rare. When a spinous ligament is in such state as to be termed "torn," the real condition is usually found to be a stripping away of the periosteum to which it is attached. It is not to be inferred that in crushing injuries where the spinous processes, lateral transverse processes and bodies are fractured and markedly displaced, that a complete rupture of the ligament could not take place.

In such injuries, however, the diagnosis of "torn ligament" is usually not made, but the evidence of the greater pathology determines the diagnosis. Even in these injuries in all probability the periosteum has yielded before the ligamentous structure. Tearing of the periosteum by the ilio-lumbar ligament as the result of trauma is a common lesion and one rarely recognized. Such a lesion will produce pain in the back over a prolonged period of time if not recognized and treated.

Probably the greater disability associated with the ligamentous structures and with its attendant pain is that resulting from adhesions to and contraction of these structures. This is a fruitful source of pain in the back for with some ligamentous structures tied down with adhesions or contracted, practically every movement of the back is interfered with by said structures acting as a check rein. The traction on the adhesions or contractures produces the pain. In the majority of instances the adhesions result in the ligamentous

structures and the muscles from hemorrhage induced at the time of receipt of the trauma.

The scar tissue resulting contracts and in time, depending upon the manner in which it acts, either causes an exaggeration or tendency to obliteration of the lumbo-dorsal curve, and at a late stage contraction of the hamstring muscles or tilting of the pelvis. Such a patient usually tells you that one to four years ago he received an injury to his back, but while it hurt at the time, and he was pretty well bruised up, he gave it little or no attention. Since then he usually has experienced periods of pain in his back, that at such times he had difficulty in bending over, or in getting up from a chair after he had sat down. He tells you that of late he can't bend over and that the pain is almost constant. As he tells you his story you can almost see the structures gradually contracting from the action of the scar produced as a result of the hemorrhage he had at the time of injury. Such a patient to obtain relief must have these adhesions broken up, the structures thoroughly stretched, the lumbo-dorsal curve normally repositioned and proper anatomical alignment of the other structures secured.

I will not discuss the sacro-iliac joints save to point out that while there are conditions such as tuberculosis, arthritis and an occasional sub-luxation of these joints, investigation of the source of back pain in the greatest number of cases will not confirm the original supposition that the trouble resided in a sacro-iliac joint.

There may be diseases of the various structures of the back which produce the pain complained of.

There may be the various inflammatory lesions of the cord and the menin-

ges; there may be tumors of the cord, the meninges, the blood vessels, bone, cartilage, nerves or muscles.

Syphilis, typhoid fever, tuberculosis, osteo-myelitis, the various forms of arthritis, actinomycosis, echinococcus cysts, or a spondylolisthesis may be responsible for the pain.

Finally pain in the back may be induced from improper posture or from sudden, more or less permanent postural changes. In such conditions the pain arises from the strain thrown on the structures in the back in an endeavor to compensate the trouble which is usually found below. Such instances are seen in school children who are permitted to sit on the "small of the back", who have pronated feet, or improper arches in the feet. A common example of the sudden permanent postural change is seen in the woman of the age in which she passes from the things of girlhood and in so doing discards the high heels she has worn sufficiently long to permit all the structures on the posterior half of the legs, thighs and back to contract to accommodate the unnatural posture assumed. With the discarding of the high heels, and the adoption of low heels, she thrusts an unaccustomed strain on the above named structures with the attendant pain.

Conclusions.

1. Pain in the back may be due to anatomic anomalies, postural defects, trauma or disease.

2. The cause of the pain in the back should be diligently sought for and measures taken to correct it.

3. A thorough knowledge of the pathology producing pain in the back will materially aid us in preventing it.

Uterine Prolapse

R. L. GIBBON, M.D., F.A.C.S., *Charlotte, N. C.*

It is very probable, were it possible to delve into the remote past of the human race, it would be found that proidentia was a not uncommon occurrence among the females of that dim and misty period of which we have no historic record, because at the present time, among certain semi-civilized peoples where the woman does much of the "heavy lifting" and receives very little care or consideration during parturition and immediately afterward, this condition is said to be rather frequent.

If this be true, it is then, no new situation that confronts us, but one that has received the careful consideration of generations of our profession. To one historically inclined, and with time to spare, both on the part of the writer and auditor, what an interesting assembling of observations, discussions, theories and methods of treatment might not be gathered from the literature of our professional forefathers.

A very brief excursion into contemporaneous writers, however, will speedily dispel any idea one may entertain of presenting all the aspects and associated lesions of uterine prolapse in one paper. In spite of the length of time in which this condition has been before the medical profession, one is immediately confronted by the number and variety of operations which have been devised for its remedy—in number, some one has estimated, close to a hundred. In a multiplicity of remedies it is pretty safe to assume that none is ideal, and so it is not surprising to see a statement in the *American Journal of Obstetrics and Gynecology* of recent date, by an author of distinction, to the effect that "the uniformly successful operation for the cure of prolapse of the uterus is still one of the unsolved problems of gynecology." The writer goes on to say that so many factors enter into the problem

that no completely successful, uniform technic has been developed. It is very probable that most if not all of us will agree to this, especially since none here, to the best of my belief, is a deviser of any particular operation.

We find uterine prolapse occurring in an almost infinite number of gradations or degrees, from the slight sagging or descent of the pivotal point of the uterus at the internal os, as described by Graves of Boston, to the presentation of the hypertrophied elongated cervix at the vulvar opening, and the final stage where the entire uterine body is protruded. We further find that this condition may be present in young unmarried women, although it is comparatively rare; that it is seen during the childbearing period of life, and is not uncommon in later life, many cases being seen in women over fifty.

For the sake of time, and because it is unnecessary, we omit any discussion of questions of etiology, symptoms, or diagnosis, and will consider here only the various methods of surgical relief. As has been previously stated, the operative measures which have been designed for this purpose are legion; but a philosophic and fair examination of the varying and oftentimes conflicting claims made would lead the impartial observer to reach a conclusion somewhat similar to that expressed by the liquor addict, who, when asked to give his opinion on the different brands of whiskey, replied that they were all good, but some were better than others. All of the standard operations have undoubtedly given good results when employed in proper types of cases; while, in the opinion of men with the widest experience, none can be considered as entirely fulfilling all the requirements of an ideal operation.

It is hardly necessary to call your attention to the fact that, aside from the technic we personally favor, the age of the patient and the degree of prolapse must exercise a more or less controlling

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influence upon our surgical measures. What would be acceptable in a woman past the menopause would probably be bad surgery in a younger patient. The possibility of future pregnancies must also receive careful consideration.

Coming now to the different types of surgical treatment, we find that the numerous measures, many of them bearing the names of men prominent in the profession today, naturally fall into two groups, viz., those seeking to support the falling uterus from below by the various kinds of plastic and interposition operations; and those who attack the problem from above and in so doing make use of the ligamentary uterine attachment. In this latter group we may also place operations designed to produce artificial ligamentation, as in ventral suspensions and fixations. It is between the advocates of these two groups that we find a great gulf fixed. In evidence of this it may be apropos to quote from an article by Graves in the *American Journal of Obstetrics and Gynecology*, August, 1923.

"It is necessary for me at once to make the admission that not since my early work, in which I discovered the futility of curing a general prolapse by ordinary plastic methods, have I attempted to cure such a case solely by an operation from below, even in the face of recommendations from such eminent surgeons as those whom I have mentioned above. And this course I have pursued as the result of a conviction, acquired many years ago and strengthened by experience, that the cardinal lesion of prolapse is the descent of the pivotal point of the uterus, and that its cure symptomatically as well anatomically demands an elevation of this point to a plane in the pelvis as high as it is possible to place it. It is difficult for me to conceive that this object can be attained as well by a supporting operation executed through the vagina, as by a suspensory operation executed abdominally." Per contra, we might quote from an article in *Annals of Surgery*, July, 1922, by Dr. Hurdley of Baltimore, who in a report of thirty cases of prolapse in

which he employed a modification of the Watkins or interposition operation, in concluding says: "The interposition operation gives better results than any other operation we have used in the extreme cases of uterine prolapse."

Without attempting to arbitrate this phase of the subject, let us consider briefly some of the advantages and defects which have been urged for and against the better known types of operations of both kinds.

Taking up first those procedures designed to support the sagging uterus from below, of which the Watkins operation is the general type (although this has been variously modified by numerous operators), the essential feature of all being the interposition of the body of the uterus between the anterior vaginal wall and the bladder, we find many reasons to justify their advocates. There is less shock than in an abdominal operation, which, in addition to the abdominal work, practically always requires a certain amount of vaginal work for the vesicocele, perineal rupture, etc. On the other hand there are limitations in its application, as in the childbearing period, where it is necessary to sterilize the woman, and in certain intra-abdominal complications, as where the uterus is firmly fixed, or enlarged by tumor formation, etc. Attention has also been called to vesical irritability that is sometimes reported to follow the operation. Also, where the technic is not carried out perfectly, there is a post-operative sagging of the anterior vaginal wall which makes the patient believe the original trouble has returned. This is said to be due in part to an insufficient removal of the superfluous anterior vaginal wall, or to an incorrect fixation of the uterus. Of course, where there is a complete failure there is a return of the prolapse plus such additions as may result from the operation.

Some very effective methods to perfect the interposition operation have been made, such as bringing a section of the broad ligament in front of the cervix together with the fascia of the anterior vaginal wall. In extreme cases it has

been suggested that, as one of the predisposing causes of prolapse is an abnormally deep posterior cul-de-sac, this be plicated and the utero-sacral ligaments be shortened. At the 1922 meeting of the Southern Surgical Association, Dr. H. J. Bolt read a paper describing a modification of the interposition operation as done by Dr. Keilland of Christiana, Norway, who has used this technic in 150 cases with no recurrences. The uterus is placed parallel with the vaginal wall; the cervix is not amputated, but a section is removed from both the anterior and posterior lips. In reply to a suggestion that the operation as described would seem to present considerable difficulty, Dr. Bolt replied that in his experience it was easier than the ordinary Watkins. For the benefit of any one desiring to look into the details of the method, Dr. Bolt's article can be found in the transaction of the Southern Surgical Association for 1922.

We now will consider the type of operation in which an attempt is made to support the uterus from above by the utilization of its own ligaments, or by an artificial ligamentation. Here we have quite a long list to choose from, of which the best known are the Alexander (and its modification by Mayo), Coffey, Baldy, Webster, Gilliam (and Kelly's modification of Gilliam's), and Alshausen suspension. Merely to mention these names is sufficient to call to your minds the distinctive features of most if not all of these operations.

The internal Alexander operation, as described by Mayo, has been criticised on the ground that it uses the distal extremity of the round ligament, which is the weakest portion, as a support, and that it is apt to be followed by adhesions and once in a great while by intestinal obstruction. To avoid some of these objections the operation was modified by Simpson, who drew the round ligament through the inguinal canal, thus doing away with the necessity of puncturing the peritoneum, and curtailing the danger of adhesions and obstruction. The chief objection seemed to be that this operation allows too little lati-

tude in choosing the height to which the uterus can be elevated.

The Coffey operation, which you may recall is a reduplication intra-abdominally of the round ligament, together with a portion of the broad ligament, has proven satisfactory in the hands of some, but has been abandoned by others as unsatisfactory. The Baldy-Webster operation, consisting of carrying the round ligaments through a rent in the broad ligament and stitching behind the uterus, has fallen into disrepute, largely because of the frequency of adhesions and failure to hold the uterus up. All of the foregoing methods have been criticised, not only on the ground that they depend for support upon the strength of the small and often attenuated end of the round ligament, but because the pull upon the uterus is exerted in an oblique line and permits more or less sagging.

Probably the most popular operations of this kind in the past have been that of Gilliam and the modification by Kelly, the round ligaments being brought through the peritoneum, muscle and fascia of the abdominal wall and sutured fast. This method has given satisfactory results in the hands of a considerable number of operators, and yet, while the supporting power is the proximal or thick end of the round ligament, and the pull is direct and not oblique, it is open to objection from the standpoint of the likelihood, or perhaps more accurately speaking, the possibility of obstruction, traumatism of the abdominal wall, and the development of a ventral hernia through the opening in the fascia. This latter, however, must be rather rare. In Kelly's modification the ligament is brought only through the peritoneum and muscle and fastened underneath the fascia.

Just now the Alshausen suspension operation has some very considerable advocates, notably Graves of Boston, who says that it more nearly meets the ideal requirements than any other with which he is familiar. The technic is simple, consisting in passing a No. 7 braided silk suture beneath the round

ligament, which has been previously grasped by a heavy forceps about half an inch from the uterus. The suture is then passed through the peritoneum, muscle and fascia, an inch and a half from the incision, and then back again in the same manner into the cavity, and the knot tied on the inside. It must be tied as tightly as possible, as the object is to get a firm adhesion to the abdominal wall. The fly in the ointment is this buried silk suture, which occasionally causes delayed union with a discharging sinus, and now and then has to be removed. Graves states that he has personally performed this operation 1,370 times, one-half of the cases being general prolapse in all stages. Of these cases 746 have been followed up at periods ranging from a few months to eight years after operation. In six the trouble recurred, three of these following labor. In 15 of the 1,370 cases one of the silk stitches became infected, and in six of these the stitch required removal. In the remaining nine the wound healed, or the stitch was discharged. This silk suture is considered by Graves as absolutely essential to the success of the operation, although I notice in the discussion of his paper, which was read before the New York Obstetrical Society in February, 1923, that some of the other men were using heavy, chromic gut instead of the silk. It is hardly necessary to say that, whatever supporting operation from above we may favor, many cases require in addition a plastic from below to take care of the cystocele and rectocele that is so often present in marked degree.

Some years before his death the late Dr. John B. Murphy described a ventral fixation operation for extreme prolapse, adapted in the main to old subjects, that so far as I have seen attracted very little notice; in fact among my professional friends I have found none who has used the method described by Dr. Mur-

phy. I think he called it the "bat wing" operation. In brief, the technic consisted in ligating the broad and round ligaments and separating the uterus, which was bisected and the two halves or sections stitched fast to the fascia on each side of the wound. The skin incision was transverse, thus allowing ample room for stitching the uterine flaps or wings to the fascia. Dr. Murphy thought that this operation, because of the firm fixation of the uterus, would render any plastic work below unnecessary. I have employed this procedure in four or five cases of marked prolapse in old women with good post-operative results. The uterus certainly never comes down, and the operation is easily done. Its chief defect is taking care of the vascular ooze from the uterus, and although I followed the advice of the originator and provided for ample drainage, I was somewhat alarmed in my first case to find that in 24 hours my patient's entire abdomen was black as a result of the extravasation of blood throughout the loose fatty tissue, nor did I in subsequent trials discover any effective method to avoid this. For the same reason a certain amount of wound infection is apt to take place. Having passed through this state, however, all of the patients were permanently relieved.

I am aware that in a discussion of this subject there is room for a wide variance of opinion and methods, in all of which there is both merit and demerit, and that it may truthfully be said that "the end is not yet"; but, having used most of the methods which have been described above, I am at present inclined to the exercise of the principle of selection in the individual case, rather than a rigid adherence to one particular method.

819 Professional Building.

Pituitrin in Obstetrics

JAS. A. ANDERSON, M.D., *Gastonia, N. C.*

If I can point out a few facts regarding this valuable substance and, thereby mitigate or lessen the tortures of childbirth, what little time and pains I have been to in preparing the same will be amply repaid.

Pituitrin in the hands of the skillful obstetrician is, I believe, one of the most valuable exytoxics we have, and yet, there is no agent fraught with the dangers of this drug in the hands of the ignorant and careless. Time was when no parturient was needed or necessary, when women lived in rural districts, worked in the home and field and took lots of outdoor exercise, when corsets and brassieres were unknown and the figure was allowed to develop along physiological lines, but now that most of our women have moved to the cities and live more or less sedentary lives, labor rarely comes on with the hale and hearty contractions of old. Therefore, it would seem to me that pituitrin is a boon to the obstetrical doctor and a great relief to the parturient mother.

Pituitrin should rarely be used in the first stage of labor, and when so given, in small doses, say two or three minims hourly until full dilatation shall have been achieved. I believe that full dosage after full dilatation, is without danger to either mother or child, where the pelvis is normal, no obstruction and no great disproportion of the foetal head.

Pituitrin is of decided value in uterine inertia, primary or secondary, and in post-partum hemorrhage. Its greatest value is in the uterine inertia occurring in the second stage of labor. Here, in many instances, its action is little short of wonderful. Many women are able to dilate the cervix, but make no further progress, or may fail to engage a head in a slightly contracted pelvis, or may slightly advance the head through the birth canal, or even bulge

the perineum, and then succumb to exhaustion. For one reason or another it is the second stage of labor which has brought about exhaustion, so fatal to our hoped-for spontaneous deliveries. It is in these cases that pituitrin shows its remarkable qualities, terminating sometimes in a few minutes cases which have dragged on for a long time with no indication of advancement, or quickly changing a slow and exhausting labor, with the pains weak and far apart, into forceful, efficient, bearing-down pains. Through its agency many of the cases that would linger for hours, and then possibly necessitate the use of instruments, are terminated in a short time with no harm to either mother or child and no more effort on the part of the physician than the giving of an ordinary hypodermic.

The drug has a much larger field of usefulness in multiparae than in primiparae. In primiparae there is usually more obstruction, and the tight perineum is too easily torn to allow of a rapid delivery.

Of the three methods of administration, I prefer the subcutaneous or intramuscular, having never given it intravenously; however, this method may be highly advantageous in post partem hemorrhage. Per orem it is said to be without effect. The drug does not always simulate normal contractions but more nearly approaches it than any agent we know of.

I have been told by patients that some physicians have called on them in labor and administered pituitrin before making examination. I consider this dangerous and criminal practice and should never be indulged in. In some patients the drug proves inert. When pituitrin acts its most beautiful effect is in that class of cases where you have full dilation and no contractions. Sometimes a few minims will turn the trick, thus saving many hours of useless waiting and anxiety.

*Read before the Seventh District Medical Society at Wadeboro, November, 1924.

Infected Wounds of the Hands and Face

EDGAR STANLEY MATTHEW, M.D., *Bunkie, La.*

In selecting this topic for tonight's discussion, I did so with the conviction that I could add little to the present knowledge of the subject. This paper is written with a view of stressing the importance and gravity of these virulent pyogenic conditions we encounter and the necessity of prompt recognition and proper treatment. Delay in such cases means further infection, spread, and perhaps a fatal termination.

These cases when first seen are usually considered trivial; there is a history of some trauma such as the puncture of a finger tip with a pen point; the squeezing of a blackhead; or the extraction of a hair from a mole on the face. At least when the cause is explained, it is one which would have appeared to be of no importance. The patient may complain of some pain in the part accompanied by throbbing, maybe some temperature, and if it is the lip, you will find a well defined oedematous area which considerably deforms the part. Woe to the practitioner who treats these cases carelessly and dismisses them with "Paint it with iodine." At this stage of the infection, these cases are minor surgery, if treated as they demand; but, if the causative organism giving rise to the infection is of a virulent type, in a few hours, certainly within 48 hours, the case has developed into a rapidly progressive lymphangitis with a systemic infection; and a fatal outcome is the usual result. There is little or no localized pus formation in these cases.

The hands and the face are quite widely separated anatomically and have nothing that classify analogously except that, being bare and exposed most of the time endangers them to similar infections. Again, the hands and the face are among the more important parts of the body and their integrity must be maintained and mutilation prevented. I

am afraid that this thought uppermost in our minds makes cowards of us all and is a factor in our unsuccessful cases. We dislike permanently to mar a beautiful face with long cicatrices the result of our surgery; we pause until tomorrow to amputate a finger, hand or forearm in a laboring man, but the infections I am considering give to their victim no quarter. Their slogan is "advance and kill" and through the circulating fluids of the body, the lymph tracts and the blood currents, their hordes advance, their red lines of invasion spreading from here to there attacking and inflaming the lymph nodes in their route until a systemic septicemia with its multiplicity of unconquerable conditions develops.

The face is divided in these infections into two zones, above and below the mouth; infection in the upper zone is considered most fatal on account of the lymphatic and blood circulation going toward the cranial cavity. Below the mouth, the drainage is toward the neck and trunk. It seems the further the focal infection is from a vital center the more favorable the prognosis; therefore the hand, which can be watched and studied, demands more conservatism than similarly infected wounds on the face, especially above the mouth.

The treatment of these above-outlined conditions demands carefully studied measures. Be conservative only long enough to be sure you are not dealing with a profound spreading toxemia and septicemia. If the case does not improve as it should under the measures adopted, resort promptly to the most heroic measures. You will have more consolation at looking at a few stumps of digits removed to save life than seeing crepe on the door of the patient. The same applies to wounds of the face.

I know of only one method to successfully treat these cases. It is early and seemingly very radical. Incise the wound deeply either in parallel lines or

*Read before the Avoyelles Parish Medical Society, at Bunkie, La., August 13, 1924.

crucially with an idea of cutting off the channels of circulation; isolate the primary focus of infection from systemic absorption; cauterize the wounds made and the superficial lymphangitis with carbolic acid for 45 seconds or a minute and neutralize the cauterization with alcohol. Place sterile gauze strips in the incisions and dress. Keep the dressing wet at all times with a saturated solution of boric acid. If at the second dressing an advance of the oedematous area is noted, extend the incision beyond this advance. In making incisions on the face, it is cosmetic at least, if consistent, to follow the lines of the face where wrinkles will later occur.

Case Report.

Mrs. C., age about 55; rather enfeebled. Trouble began with pain on dorsal side second phalanx second finger left hand; throbbled for several days; then a small bloody bleb appeared at point of pain; whole finger swollen; fever accompanying.

Under local, the tissues between the first and second phalanx were incised to the bone and a small amount of pus escaped. The following day the inflamed area had extended to the third joint with a superficial lymphagitis indicated by two bright red lines on the anterior

aspect of the forearm. The epitrochlear gland was tender and enlarged and there was some axillary enlargement. Fever high. This invasion was treated surgically the same as the first. One week later the last phalynx became involved, and it also was opened and drained. All these wounds were swabbed with carbolic acid and alcohol and later swabbed with mercurocrome. The dressings were kept wet with saturated solution of boric acid. In five weeks the patient had recovered and has a useful finger.

Case Report.

Mrs. L., age about 50; fairly well nourished. Had a small keratoid patch on tip of nose which she picked and got infected at noon. At 5 p. m. I was called and found her with a distinct chill, temperature at this time was 102. The entire nose was red, and mis-shaped. I cauterized the spot and gave some preliminary treatment. The following morning, under local, I incised the infected area in several directions and swabbed with mercurocrome. The entire face was inflamed; there was general adenitis in both sides in jugular and sub-maxillary regions; high fever; delirium; profound toxemia and patient died 36 hours after onset.

Some Psychotherapeutic Suggestions for the Relief of Indigestion

GEORGE M. NILES, M.D., *Atlanta.*

General Principles of Psychotherapy as Applied to Various Forms of Indigestion.

Let me affirm as a proven fact that there are but few gastrointestinal diseases, no matter how material or far advanced, but what psychotherapy possesses for them a beneficent function. Even where a fatal termination is assured, and nothing can be done for the disease, something may be done for the

patient, either by diverting the mind, or keeping alive the spark of hope, without which all would be blank despair. This is the most that can be expected in such melancholy conditions, but because a cure is not in view, the physician should not cease his efforts to infuse courage and cheer into the mind of the invalid. There are several reasons for this. In the first place there is a possibility that the fatal prognosis is a mistaken one. Many instances are on record in which

after an unfavorable prognosis was given, the patient recovered, outliving the physician who made the prognosis; again, there may be a mistake in the diagnosis, or the patient may possess a recuperative power not realized by the medical attendant. There are many objections to a gloomy prognosis, even under the most unfavorable circumstances, and, if the physician will use to the uttermost any little grains of encouragement, while he says as little as possible concerning the less favorable aspects of the case, his influence on the course of the disease, will necessarily be uplifting; and he need not utter a single deceptive word.

The Personal Equation.

Some physicians possess a personality which in itself inspires confidence, though anyone has within his power the faculty of cheerfulness and optimism. Undue levity in a sick room is of course to be deprecated, and to laugh at a patient's recital of woes, even though they be ridiculous, is nearly always harmful. Ridicule has no legitimate place in rational psychotherapy. A warm-hearted grasp of the hand on greeting a patient; a cheerful and smiling but earnest countenance, betokening a real desire to be of assistance; a sympathetic interest in the recital of infirmities—all these attributes on the part of the physician, will gain the patient's confidence, and will insure a receptive attitude for every therapeutic effort that may be later brought to bear. Every one has heard some person remark that a certain doctor's medicine helped him more than some other doctor's, because he had more confidence in the former. This is a simple exemplification of both the influence of the personal equation and psychotherapy itself.

One of the first essentials in entering upon the treatment of a gastrointestinal disease, especially if it be chronic, is a thorough and systematic examination—more thorough if possible, than any the patient has previously undergone. This has a double advantage—it bestows upon the physician a double knowledge of past and present conditions, and it

convinces the patient that a deep interest is being taken.

Another point worth mentioning is the desirability of inaugurating some form of treatment, no matter how insignificant, as early as possible after taking charge of the case. While a leisurely amount of deliberation is necessary and praiseworthy, the viewpoint of the patient is from a different angle, and, if the physician dallies too long he will lose some of his influence. A placebo can do no harm, and it will keep the patient in a more satisfied frame of mind, until the diagnosis is fully made. When a patient goes to a physician, he **expects** treatment, and if something apparently tangible is not done very soon, even the most intelligent patient will feel a shade of disappointment or dissatisfaction; and, if less intelligent, may break into open rebellion.

There are conditions of this sort that confront every physician, and he can, by the exercise of tact and personality, overcome them with perfect dignity and no stultification of his professional standing. First impressions are often lasting, and that the first impressions in the mind of a patient toward the physician may be those of confidence, is important in the extreme.

Psychotherapy in Regard to Diet.

A few patients complaining of digestive disturbances, especially chronic forms, are suffering from excessive eating; rather more from injudicious use of stimulants; while the majority, in my experience, suffer from under feeding. Practically all of these dyspeptics are on a **diet**, either self-imposed or instituted by a physician months or years previously. The diet is often totally inadequate to furnish the necessary calories required by ordinary demands of the body, consequently the body is ill-nourished, the nervous poise is rendered unstable by physical weakness, and the patient is less able to fight the inroads of disease. In many instances the hunger pains, the weakness, the emotional outbursts, and the countless vague discomforts which accompany slow starvation, are mistakably attributed to in-

digestion and the diet is still further restricted. These ill-nourished sufferers have generally developed a sitophobia, or fear of food, and it will require every effort of the physician to overcome this fear. If after careful examination, there is found present a working quantity of digestive juices, and the motility is not radically impaired by organic lesions, the dietary should be generously increased, while strenuous endeavors should be instituted to change the mental attitude of fear into one of courage and confidence. Here is the opportunity for psychotherapy.

I often tell these timorous patients that there is **positively** enough gastric juice present for their needs; that if they will eat the food as I urge, I will help them with its digestion; and that they need fear absolutely no evil consequences.

In some cases the digestive organs, which have had nothing to do for so long, will rebel, and the patient will suffer from colicky pains and some soreness. This is explained by the comparison of heavy muscular labor performed by one who has long led a sedentary life and the consequent soreness, which will pass away if the exercise is continued. Thus, after the stomach and intestines have adjusted themselves to the new and more liberal regimen, with increased bodily strength, there will be noted increased nervous stability, a more cheerful view of life, and a general feeling of comfort and well-being.

As an illustration of nearly every point here discussed, I can cite the case of a lady of fifty-eight years, who came under my care nearly a year ago. She was suffering from an organic, but not malignant stricture of the esophagus, which had so reduced the lumen of that canal, that she could only take liquid nourishment and in teaspoonful quantities at the time.

She was thin, nervous, and emotional, constipated, suffering from insomnia, and complaining of constant "indigestion." She was habitually taking medicine for the three complaints—constipation, indigestion and insomnia. Her

esophageal obstruction had been incorrectly diagnosed as "nervous affection," though never explored with a sound.

The stricture was dilated with comparative ease, until a 20 English sound could be passed with facility. She was then told to increase and diversify her daily bill-of-fare and a simple alkaline carminative was given her mainly as a placebo. She was quite fearful that her stomach would not "bear" solid food, but having won her confidence, and after earnest assurances that she was able to digest what I recommended, she began to eat.

After about a dozen good meals the pains of the supposed indigestion began to disappear, and in two weeks they were gone. She found to her delight, that she could sleep without her accustomed "Sleeping draught," her fits of crying ceased, her disposition became bright and happy, and with increased weight and vigor came satisfaction with her daily life. It is still necessary to keep the stricture dilated at intervals, but she has gained about 30 pounds, and at present seems in perfect bodily and mental health.

Another important adjunct to the application of successful psychotherapy in digestive diseases, is to look after the small and intercurrent ills as they arise. If the physician will take sympathetic cognizance of the minor complaints, and will make minor concessions in unimportant matters, he will find that he can better exert his authority in important matters. Chronic dyspeptics have more than the usual share of human frailties, and if the physician attempts to entirely revolutionize their habits and customs, he may so upset and discourage them, that they will not make the proper effort to get well or to co-operate with him.

If they can have their way in non-essentials, they will much more readily yield to advice in essentials.

Change.

This one word sometimes solves the whole therapeutic problem. It is noticeable that one's digestion is always good on a holiday, and many people find they

can, with impunity, eat articles of food while on a vacation or pleasure trip, which would profoundly disturb them at other times. On such occasions the mind is generally care free, the thoughts are on external objects, while the attention is diverted from the stomach, and all that pertains to it.

It is not always practicable to send a patient on a protracted vacation, nor can we always arrange a radical change in his business habits. When it is possible, however, the greater the change, within the limits of comfort and propriety, the greater the probable benefit. To take the wearied bookkeeper from his desk, and put him "on the road" for a while; to place the road-worn traveling man in the quiet haven of an office, to send the **blase** city man out among the green trees and meadows of the country; or to take the housewife, who has grown sick and weary under the monotony of life in some isolated community, and let her enjoy the bustle and sights of a great city for a season—all these, and others that ingenuity or practicability may suggest, will in many instances vary the diseased current of digestive thought and banish the introspection, the self-analysis, the self-pity.

Cheerful Companionship and Environment.

When the man of wisdom said, "A cheerful heart doeth good like medicine," he uttered a truism that applies to the twentieth-century civilization, as

well as ancient times. The lack of sociability and good cheer at the table predisposes to indigestion, while the business man who eats his breakfast with his face buried in a morning paper, with not a pleasant smile for anyone, who eats his lunch in sour solitude and with gastronomic contemplation, is much more liable to the pangs of indigestion than a cheerful one, who intersperses the progress of his meals with pleasant anecdotes or bright and entertaining conversation. If I were asked to advise between a hurried meal with good cheer, and a deliberate meal with anger or disgust as its accompaniment, I would assuredly choose the former for safety.

It is worth the thought and time of the physician to regulate for good, if possible, the environment of every chronic dyspeptic. Otherwise many a well-chosen prescription will come to naught in the presence of petty worries and repinings that seem to act with malign force on the digestive organs.

A confrere recently reported to me the case of a young lady who had long been troubled with nervous indigestion, and who was quickly relieved after changing her boarding place which was rather somber, and which numbered among its patrons some crusty and disagreeable individuals who made her excessively nervous. This physician not only insisted that she make the change, but saw to it that she was established in pleasant and congenial surroundings, and the good results justified his expectations.

"Farewell, and Stand Fast"

JOHN QUINCY MYERS, M.D., *Charlotte, N. C.*

It is with a feeling of keen regret that my career as your president ends. I have tried very earnestly, giving unstintedly of time and effort, to promote mutual cordiality, and effect a consistently helpful administration. I have been present at every meeting since my

election, and have studied the various situations to the end that we might have harmonious meetings and at the same time enthusiastic discussions. The minutes record whatever of success may have been attained. Such members who have been regular in attendance have their own opinions.

An address before the Mecklenburg County Medical Society on the occasion of his retirement as president.

This term of service has been a very great pleasure to me, and I have learned something at each meeting that is of

great and lasting benefit. I wish to thank those among the members of the society who have contributed the papers we have had during the year. Nowhere have I listened to papers more valuable, nor better presented.

And we have enjoyed and received benefit from papers and discussions from members of the profession outside our own society. Among those who have been our guests are Dr. H. Neil Blair of Pinehurst, Dr. Frank Howard Richardson, of Black Mountain, N. C., and Brooklyn, N. Y., and Dr. L. A. Crowell, of Lincolnton.

It has been our pleasure to present as a token of love and esteem, watches to two of our members, Dr. John R. Irwin and Dr. L. C. Hunter, each on the occasion of his having reached his seventieth birthday, and each still in active practice and attendance on our meetings.

We are all proud that at the suggestion of some of the leading members of the society, each meeting has been opened by asking Divine guidance and assistance in our work and deliberations. This opening devotional prayer service has been led each time by some member, and participated in by the society as a whole.

Perhaps the most valuable and far-reaching good which this society has accomplished has been through co-operation with the State Board of Health Tonsil and Adenoid Clinic. Members of this society operated on two hundred and fifty cases within the city of Charlotte. The clinic would not have been held in Mecklenburg County, and all these children, besides the many others who were operated on as a result of the clinic, would no doubt have continued suffering from these handicaps, had we not given our consent and support to this great educational movement.

Whatever may be the result of the bond election for a county tuberculosis hospital, this society has the consciousness of using its best efforts for its being carried, and giving its unanimous endorsement to this tremendously important endeavor.

The liaison committee, of which Dr. R. F. Leinbach is chairman, has rendered valuable service, not only in the interest of the County Hospital for the Tubercular, but in other very vital matters of community interest.

During the year there has been installed electrical equipment for demonstrating on the screen illustrations of the various subjects which are presented for discussion. I want to congratulate the committee headed by Dr. L. C. Todd, appointed to this service for their earnest endeavor in securing these instruments for our use.

I want to mention to the society, for their recognition and appreciation, the interest of the two daily newspapers of Charlotte, and the editorials of the Observer and the News, in behalf of a municipal hospital for the city of Charlotte. The medical profession is charged with the responsibility of leadership in all matters pertaining to health. An important part of this is the hospitalization of the sick. The people of Charlotte and Mecklenburg County are depending on us to tell them what is needed along these lines; if we say nothing, they assume, and have a right to such assumption, that we deem the situation adequately cared for. We all know that there is a deplorable need along this line, and it is our sacred obligation to make the facts known to the people, and to use our every influence to institute such measures as will result in the erection of a municipal hospital which will care for Charlotte's needs.

In this general inventory of the status of our society today, it is not enough to consider only our assets. The things which have been accomplished are of tremendous value and indicate progress; these things are an asset on our balance sheet.

But we must, in a constructive, helpful spirit, think about the things wherein we have failed. We must consider our liabilities before we can strike a balance.

The attendance during the year has been very good, and in comparison with our past history we might feel satisfied;

but the attendance at meetings has not been what it should be. This society is primarily a scientific body, organized for scientific purposes. But in addition, it should be a fraternal organization—each member co-operating with every other member for the mutual good. And I do not mean our mutual good only along scientific lines, but in every form of well-being.

There is none so blind as he who will not see. It is reasonable that the man who is genuinely interested in improving himself will use every opportunity offered to increase his knowledge. The fellow who sits down complacently, saying, "I don't need to go to the meetings," automatically puts himself in the class of those who refuse to know. That doctor who attends society meetings regularly is best qualified to render service to his patient and to the doctor with whom he may be in consultation.

I am sorry to say that there are names on our register whose owners are seldom seen at our meetings. This has been so obvious that I, for one, have made up my mind that so far as my personal influence goes, I shall use it for the benefit of those who do come to our meetings, and who take an active fraternal interest in the common good of

the medical profession of Mecklenburg County. I am not alone in this attitude. There are others of you now present who have confidently expressed the same feeling to me. If our own house is not in as good order as it might be, there is no justification to be found in the fact that our neighbor's may be still worse. Perhaps our own society has more of a true fraternal spirit than many societies. Even so, there is room for improvement.

The officers you will tonight select should be chosen with the one thought of getting men who will think first of Mecklenburg County, and not first of themselves, or their personal friends. Only by lifting the entire profession can good be achieved to the individual or to the community.

In choosing your delegates to the state meeting, select men who will, without fail—providence permitting—attend that meeting. And choose men who will be on the floor of the House of Delegates every minute that body is in session.

And finally, I call on you here and now, every man and woman of you, to put your shoulders to the wheel, that we may exert a united, co-ordinated effort to accomplish the highest ideals of consecrated medical men.

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usable medical knowledge.*

Medicine Militant.

For centuries one of the most important of the Christian denominations has divided the Church into: (1) The Church Militant; (2) The Church Expectant; and, (3) The Church Triumphant. This is a natural, sequential order. We medical men have fatuously assumed that we have arrived at the third without having passed the first. We have folded our hands and complacently assumed that our virtues would be so outstanding that all would perceive and laud them. In this we have been grievously disappointed. Every variety of impostor is slapped on the back and called "George" in the eating clubs, and joins lustily in roaring about "prairie flowers," or in imitation of certain of the beasts. They are even appointed by churches to act on health committees.

The attitudes of the members of the medical profession have been determined either by indifference, resignation, pomposity, fear, or ignorance.

There is a well-defined tendency on the part of the majority of those who have achieved conspicuousness in our profession to assume a pose of aloofness and indifference as regards the fate of lesser persons, both within and without the

profession. Of course, to this there are numerous and notable exceptions. But the rule is an attitude based on some such line of thought as this: 'I am a successful doctor; I am making money; the profession and the laity respect my opinion; I am somebody: if I say anything against these impostors, these frauds, these quacks, some one will think I fear my position in danger. I shall rest on my laurels.'

In a few instances there is this additional deterrent to active opposition. Patients of these irregulars, who can no longer be held, are naturally referred to sympathetic regulars. Some others give as an excuse for inaction the imperfections and the peccadillos of members of our own body, unctuously quoting the scriptural passage dealing with the mote and the beam.

Of necessity, it follows that in the different classes of apologists and side-steppers are included many of the members of the profession most prominent in their several communities who exercise most influence in the various Chambers of Commerce, civic clubs, lodges and other organizations influencing and casting votes.

If the disastrous consequences of licensing (and thus sanctioning) members of the various so-called *schools* of treatment fell only on those who have had the training to enable them to evaluate opposing claims, and so arrive at conclusions, we might well dismiss the subject as one of little concern.

But by far the greater number of the diseases which conspire to kill or cripple attack in the years of non-age. Infants and children, who have no opportunity to choose for themselves, are entitled to consideration from the State. The same may be said of wives; for, notwithstanding the extension of the franchise, the enlarged activities of the Woman's Clubs, and woman's usurpation of the barber shops and smoking cars, many yet suffer under the dominion of man. An instance coming under the direct observation of the writer will illustrate this. Soon after the North Carolina Legislature passed the act doing away with quarantine as a measure in

the control of smallpox, a patient, six months advanced in her seventh pregnancy, contracted the disease from her second child, miscarried, and died. I am convinced of the wisdom of the law despite this. The point which I am making is that it is entirely possible for intelligent wives to be swayed by ignorant, opinionated husbands, and so be denied the benefits which they would receive were they entirely free to exercise their own judgments. The dependence on vaccination rather than quarantine is based on the soundest kind of reasoning. Vaccination is effective and cheap; quarantine is ineffective and expensive, besides giving a community a feeling of security which is not warranted, at the same time retarding the growth of sentiment in favor of universal vaccination.

Regular medicine has been singularly remiss in impressing on the general public the value of the services it has rendered; or has called attention to them in such vague, or such spread-eagle terms, as to make little impression. Let facts be presented for candid consideration.

Before the introduction of vaccination it is believed that the great majority of the inhabitants of the civilized world had smallpox, twenty-five to fifty percent dying and practically all the survivors being permanently disfigured. It is of interest to note in the voluminous diary of John Evelyn, who lived through the greater part of the seventeenth century and was one of the founders of the Royal Society of England, the ever recurring accounts of epidemics of this disease. He, himself, lost two children by it.

Within the memory of many of us diphtheria was a terrible scourge of infancy and childhood, only to yield to typhoid as the great destroyer holding sway through the second and third decades.

A hundred years ago nearly half of the babies born in this country failed to reach the age of two years.

Fifty years ago abdominal surgery saw its beginning as something more than emergency treatment. The regu-

lar medical profession has brought smallpox, diphtheria, typhoid, malaria, yellow fever, plague, rabies, and child-bed fever under control; it has made health resorts of areas in which white men could not live; it has robbed parturition of its agonies and the puerperium of its dreads; in a half century it has added more than a decade to the average of human life.

Against this record of solid achievement what do the irregulars present for consideration? Nothing more substantial than Hahnemann's catchy shibboleth, which has no foundation in fact; the late Mrs. Eddy's meaningless jargon; the Abrams' myth which was turned inside out by the Scientific American; and the Gargantuan fraud foisted on a credulous world under the name of chiropractic! Truly a fine hodgepodge of crass ignorance, vulgar superstition, sneaking hypocrisy and deliberate fraud!

Notwithstanding the facts that a homeopath is now in the Senate of the United States,—and incidentally using the dignity of his high office to sell material for a so-called "health column" in daily newspapers,—that another was the personal physician to a recent President, Hahnemannism is on its last legs. Lest some feel constrained to argue that there must be much good in a system whose exemplars could be so honored, it may not be amiss to note here that there is a well-authenticated story which tells of John Quincy Adams standing, hands beneath coat-tails, before a life-size portrait of one of his predecessors in the Presidency, being overheard to remark, "To think that that old wooden-head will go down in history as a great man!" It may be safely assumed that the presidents knew each other.

Eddyism appears to have passed its zenith and to be definitely on the decline. Doubtless the family of unintelligibilities, born of a pseudo science and a spurious christianity, with Mary Baker G. for "granny," will retain a certain number of devotees, so long as regular medical men will furnish succor when the absurd theories of the irregulars are

put to the test and found utterly wanting. Those who wish to be, in the **pa-tois** of the ribbon clerk, "different"; those who, never having been able to understand everyday things of the utmost simplicity, readily grasp and assimilate the esoteric and recondite, and even the non-existent; and a few kindly souls who find it pleasantly possible to believe that, "Evil is the Good we do not understand," will always find some interested evangelist preaching a congenial doctrine,—and repeating under his breath the taunting words of the Veiled Prophet of Korassan, to his deluded followers, "Ye would be dupes and victims; and ye are."

Now we come to Davenport! It is said that the silk hat came into being in this way: A hatter who was an arbiter in matters of dress for men wagered with a fellow craftsman that he could make a number of models, allow the second hatter to choose the most absurd of the number, and then make this model the fashion. In some such way chiropractic must have been hatched. Had one started out with the deliberate intention of promulgating a thoroughly ridiculous theory of pathology and treatment he could not have better succeeded. The bones which form the spinal column are wonderfully assembled. Each vertebra has two pedicles, two transverse processes, two laminae, one spinous process and four articular processes. All these are bound together by powerful ligaments and overlaid by massive muscles. Most likely the tractive strength of the spinal column would be equal to the task of towing the largest truck. Violence such as that inflicted in a fall from a great height, and destructive disease, constitute the only ready means of bringing about any disarrangement of its component parts. And when such disarrangement has been effected, a punch, jab, adjustment, or other manipulation, would stand no chance whatever of correcting it. It is difficult to bring oneself to serious refutation of such arrant nonsense as makes up their claims. It gives a feeling of combatting shadows. One who can think he believes that jar-

ring his spine by stepping from the curb to the street, or turning in his sleep, can "pinch a nerve root" and bring about astigmatism, fits, appendicitis or piles, finds no difficulty in the way of accepting the equal absurdity of the plan of treatment.

Some will say "look at their results," assuming that what happens after treatment happens because of treatment. Nothing could be more fallacious.

We members of the regular profession are great offenders in this regard. It would better become us, and better serve the cause of truth, to be as specific as we please about the planting and watering, but quite reserved in ascribing credit for the increase.

The man healed of his blindness who put himself on solid ground by confining himself to, "This I know; whereas I was blind, now I see," set an example well worth the following by medical men. But the human mind has never devised a scheme so fantastic that it would not gain adherents; and among these are numbered many who are estimable, honorable, and whose general intelligence is high. As Oliver Wendell Holmes concluded after surveying the evidence on medical delusions to his day; "Neither immaculate honesty, vast general acquirements, nor even great mental acuteness is any specific against human folly."

Now comes the question what is to be done about it. Once the title doctor was distinctive: it was worth something. Now it is applied indiscriminately and impartially to Eminent Divines, and obscure corn trimmers; to Presidents of Universities, and menders of furniture; to physicians who have been students of science for fifty years, and manipulators who were coal heavers or house painters six months ago. We have the choice of two means of clearing up this confusion. We can exert our strength and influence to prevent the continuation of this habit; or we can abandon the title to this miscellaneous horde.

The negroes have about driven white folks out of patent-leather shoes and white waistcoats; we can leave the ir-

regulars in sole possession of the title of "doctor," and, in a twelve-month, it would be as worthless to them as a last year's bird nest.

Legislators have voted to license beaters, rubbers, shockers and layers-on-of-the-hands, through, no love for them, but because they were organized, acted as units, and cast votes in blocks. Some few are influenced by the array of witnesses who testify to having been cured. This can readily be counteracted by reminding those of any intelligence of the natural tendency to recovery, and the getting together of a few details concerning those of the "exhibits" which can be proved to be fraudulent. The major influence can be flatly met by instituting a movement to have regular doctors drop their "holier-than-thou," "it-isn't-worth-noticing" attitude; quietly remind their patients from day to day of their dependence on regular medicine; keep a record of the votes of legislators in all our halls on health measures; discuss these matters fully in our meetings, and vote for those men who show both sufficient intelligence and sufficient honesty to espouse the cause of the science which protects humanity against the quackery which preys on it.

The Tri-State.

The Tri-State Medical Association of the Carolinas and Virginia is an unusual society. Organized at a time when medical men were very loosely associated; when, with few exceptions, each doctor was working for himself; and when the greater number of medical meetings were far more social than scientific; it has lived through the re-organization of the American Medical Association and its component state and county societies, and still has a reason for being.

The three states represented fall into a natural group. They have many health problems in common; they have similar histories and aims; patients go back and forth between them; and their people understand each other.

The large societies have their func-

tions. The breaking up into sections, at best, is a necessary evil. The entertainment features are distracting in more senses than one. The lobbying and corner whispering, accompanied by much wagging of heads and stroking of chins, are more impressive than encouraging. The campaign headquarters and managers are too conspicuous. The rides about the city take up too much time in showing sophisticated doctors and their much-traveled wives country clubs, golf links, city halls, Masonic temples, womans' clubs and residential suburbs, which are, in practically all essentials, identical with those they saw last year in some rival town. For most of us the rubber-neck wagon has lost its charm.

The Tri-State has reduced to twenty the number of papers to be read before a given meeting and has adopted means to assure the presentation of these. This facilitates the making of arrangements by the officers for quarters and accessories, and by attendants for profitable apportioning of time. In the opinion of some of us it would be wise to go a step further and require that all papers tentatively accepted be submitted to a **board of censors** before being made a part of the programme. If we may judge from the zeal for improvement shown at the recent meetings, no petty considerations will be permitted to stand in the way of this accomplishment, and it will be effected unless weighty reasons are brought forward against it.

The society has been peculiarly fortunate in its secretaries. A citizen of the French Republic once told the writer in answer to a direct inquiry as to the function of his president; "The President; he makes speeches." A great many other presidents "make speeches!" But secretaries of going concerns must work. Aside from country preachers, it is doubtful if there is a calling at once so necessary, so faithful, so neglected and so unrewarded. A philanthropist has recently undertaken to mitigate the hard condition of the preacher; here can be paid only a tribute of words to the mainspring of all or-

ganizations similar to ours,—the secretary.

The announcement of the coming meeting in Richmond is carried in another column. There is every prospect of a programme of high inspiration. It should amply repay every member who attends and prove an incentive to many others to come in and share the benefits to be derived from active membership in a medical society devoted wholly to higher and better medicine.

Hospitals for the Tuberculous.

Those who are interested in the tuberculosis problem in North Carolina will find an inspiring object lesson in Guilford County's new Sanatorium for the Tuberculous, located five miles north of Jamestown on the National Highway. If we may presume to define a successful hospital, by a non-technical formula, as an institution maintaining no unoccupied beds and with a list of applicants for admission waiting to refill each bed when vacated, we may assert, without disparaging the work done in any other county institution for the tuberculous, that Guilford County is maintaining the first and only successful county tuberculosis hospital in North Carolina. We thus differentiate Guilford's institution from others, maintained for the same purpose, on the broad basis of voluntary patronage. It may scarcely be debated that a hospital maintained as a public institution for any group of individuals is unsuccessful to a degree, if it fails to draw to its vacant beds, those individuals for whom such beds were established, provided such individuals exist in sufficient numbers, and provided the cost to the patient is not prohibitive.

Guilford's institution is now well along in its second year of service; that it has been wonderfully successful under the able management of Dr. and Mrs. Spruill, may easily be learned from the records of the institution. That Guilford's citizens are proud of their Sanatorium is just as easily and surely to be ascertained. At a construction

expense of something over \$200,000 and an annual maintenance expense of approximately \$50,000, Guilford County has carried out a great social experiment for the State, the full significance of which is probably apprehended only by a relatively few people in the state.

It is scarcely too much to say that Guilford County through the manifest success of her experiment has solved, geographically speaking, one one-hundredth of North Carolina's tuberculosis problem. Solved, let us say, not in that the eradication of tuberculosis from Guilford County is imminent, but in that a practical working method has been established, by which treatment is brought to her tubercular citizens at home on a scale approaching the needs of the situation.

It is self evident that an institution which desires to draw patients of any class, high or low, suffering from any particular ailment must first have something to offer those individuals. A roof, a bed and an attendant to bring meals do not constitute a hospital for a tubercular individual any more than they do for one suffering from any other non-surgical disease. Guilford's institution is well equipped with the essentials of a hospital for the treatment of tuberculosis. These essentials are a competent and trained specialist in tuberculosis residing on the grounds; the services of a trained dietitian, of trained laboratory and X-ray technicians, of trained nurses; physical equipment in the way of X-ray apparatus, sterilizing plant, cold storage plant, and complete culinary apparatus. Even in the field of surgery, there must be an emergency operating room, rarely to be used perhaps for the giving of surgical treatment other than pneumothorax.

There are those who, from their angle of view, oppose in good conscience the establishment throughout North Carolina of sanatoria built and maintained by the individual counties of the State. Their opposition may be based on the climatic argument, on the increased tax rate, or on other reasons not known to the writer. Some offer counter projects for the solution of the State's problem.

One of the most alluring of these counter projects is found in the plan of erecting around the state sanatorium, on its tract of fifteen-hundred acres, individual county units. This plan, the writer himself discovered (as he thought) some years ago. He has since met a number of independent enthusiastic discoverers of this plan. Its attractions and theoretical advantages are indeed manifold. Every argument based on economy and efficiency in construction supports the idea. Economy of maintenance through central heating and lighting plants, a central food station, central X-ray and chemical laboratories, all operated by the State with costs pro-rated to the counties, would likewise be achieved. The working stimulus of association between many members of a large medical staff engaged in the same work, the resulting standardization of work, the advantages of consultation with a chief experienced consultant maintained by the State, would constitute advantages of a less material nature, as would also the facilities of providing amusement of high grade for a large body of convalescent patients.

What plan could be more alluring in theory than this? Indeed, those who drafted the provisions for North Carolina's Sanatorium envisioned such a possible development and made provisions for it in the legislative act creating the State Sanatorium. The development did not follow. The reason is not far to seek and it lies in the home-loving instincts of the race. Those who are most familiar with the problem of tuberculosis, among the middle and lower classes of society,—and it is among these that the disease is most prevalent,—have learned by experience the practical impossibility of deporting in any considerable numbers the tuberculous invalids of any given locality to any other locality in search of cure. The few who may be induced to go away represent the exceptions which prove the rule. Hospital care for the tuberculous, if to be made practically accessible to appreciable numbers, must be provided

not far from the homes of these individuals.

Guilford County's object lesson has already borne fruit. The success of her institution has attracted the attention of numerous other counties in the state. Mecklenburg, standing proudly second in the list, has just carried by popular vote on December 9th, a bond issue of \$100,000 for a county tuberculosis hospital to be built within her limits. In Forsyth County, Durham County and Wayne County, similar projects are on foot and have received the indorsement of all important civic organizations in their respective county seats of Winston-Salem, Durham and Goldsboro. Doubtless, within a brief space of time, other counties will follow their lead. It is an end devoutly to be wished.

Present state laws render it impossible for a county to bond itself for hospital purposes beyond the limit of \$100,000 and such an expenditure of county funds must be authorized by the vote of the people. This limit is too low. It is to be hoped that the legislature will, at its coming session, raise the limit so that counties may be able to vote an adequate sum for hospitals proportioned to their needs.

Prior to July, 1924, such bond issues had to be carried against the general registration for each county. Since the new act of the legislature, special registration may now be called for purposes of this kind, and county hospitals for the tuberculous are thus brought within easy reach of any county with a relatively live anti-tuberculosis sentiment, without the necessity of expending years of effort to enlighten the masses of uninformed and indifferent voters of a county or community.

—R. F. Leinbach.

Post Mortems of Personalities.

In medical usage the term post mortem has come to mean the search after death in the physical being for abnormalities of structure, or evidence of disease or of injury. There is no good reason why the term should be so restricted, and it is not so used in an interesting

little volume that has been passed on to me by Vernon of Morganton. The title is "Post Mortem, Essays, Historical and Medical," and the author is C. MacLaurin, M.B.C.M., F.R.C.S.E., L.L.D., lecturer in Clinical Surgery, University of Sydney. He comes on the stage too late to allow him to do the usual physical post mortem on the historic personages with which the volume deals. But one must confess that his dissection of their personalities affords more interesting reading than the dissection of their dead bodies would furnish. His thesis seems to be that unusual, or certainly abnormal, conduct must be a manifestation of an abnormal state of mind, and that such a state is often a reflection of underlying physical disease. I think the little book might be called a study in kakogenics.

In brief essays he considers Anne Boleyn, Joan of Arc, the Empress Theodora, the Emperor Charles the Fifth, Don John of Austria, Cervantes, Don Quixote, Philip II, Pepys and his wife, Edward Gibbon, Jean Paul Marat, Napoleon, Benvenuto Cellini, and there is a final essay on Death.

Anne Boleyn, the second wife of Henry the Eighth, was his mistress before she became his legal wife, and MacLaurin finds in history sufficient reasons to enable him to believe that a more notorious whore never walked the streets of London. Henry the Eighth was eaten up by the new syphilitic infection the men of Columbus had just taken back to the old world, yet Elizabeth who became the great queen, was the child of such parents. I respectfully direct the attention of modern eugenists to this essay, which would seem to tend to refute the inspired statement that figs cannot be gathered from thistles.

Joan of Arc, the poor little illiterate French girl, a heroine because of the inspiration that came to her through her delusional idea that God and saints spoke their commands directly into her ears, was not the first nor the last person to lead a great movement because of undiagnosed insanity. The same misunderstood mental state that gave her the command of a victorious army even-

tually caused her to be led to the stake.

Emperor Charles V died in mid-life, probably of nephritis and arterial hypertension, resulting from an active pyorrhea which caused the loss of all his teeth. But for his comparatively early death which might have been prevented by proper dentistry, the history of the English-speaking world would be different.

Who has not read at least some portion of the diary of Pepys—the humanest stuff ever written down? He recorded confessions and indiscretions involving himself that the average man will not even allow himself to think about. His wife had pyorrhea, he had a stone in the bladder, which had to be removed by a brutal operation because anaesthesia was then unknown and at post mortem a nest of stones was found in the left kidney. Pepys was one of the most interesting human beings that ever lived. He did not know what sexual morality was, and he seemed without physical courage, yet when the dreadful plague came to London he sent his family away to safety, and he stuck to his work as Secretary of the Navy, while one-fifth of London died around him. And MacLaurin thinks the plague retarded the advance of civilization several centuries.

Edward Gibbon had a hydrocele which was probably not a hydrocele at all. Jean Paul Marat, the most villainous and blood-thirsty man that ever lived was, (May God hereafter save our profession from the like!) a doctor. But he was crazy, and it was his paranoiac delusions of persecution that made a butcher of him till Charlotte Corday gave him the cold steel under the ribs.

Mayhap some day a psychiatric examination will be made of all the leaders of thought who seriously talk of war. And, why, pray, should not all who are to assume grave authority, and to speak and act for The People, be subjected to the necessary tests to find out their individual fitness for such assumptions? Professional men—doctors, lawyers, druggists, and others,—are not allowed to minister to mankind until they have

been able to acquire by special training specialized skill.

The final essay on Death reveals a spirit apparently untroubled by fear of the terminal dissolution and undismayed by contemplation of the life beyond the grave, if such there be. His bedside observations, of saint and sinner alike, have brought him to the conclusion that passage into the final sleep is not unlike the slipping from consciousness into the pleasant unconsciousness of nightly sleep. Death-bed terrors and "last words" are practically unknown.

"Post Mortem" is not a charming volume, but it is informative; it provokes thought; it begets charitableness; it hints that profound personal reformation is possible; it tends to indicate that unrecognized insanity was the cause of much suffering and distress in the ages gone by, as it is today, and it reveals the probable baneful effect of human physical disease on the progress of civilization.

What an interesting lecturer in clinical surgery C. MacLaurin must be, 'way over in Australia!

And one falls to wondering what Cary Grayson would have had to say about Woodrow Wilson if he, instead of Alderman, had been addressing the Congress of the United States. Alderman projected a Woodrow Wilson from his brain; Cary Grayson would have told perhaps about the gradual changes taking place in personality resulting from

slowly developing arterio-sclerosis, which made comfortable human contacts more and more difficult for the great man; which gradually estranged friends and followers; made impossible the cooperation of senators and world statesmen, and finally resulted in physical and mental helplessness. What a pity Grayson cannot tell it all! But a doctor must take down into the grave the facts about his patients, and if they be personages, centuries after their deaths some historian creates in his own mind what the world comes to accept as a true estimate of an historic figure.

—Jas. K. Hall.

The Department of Dentistry.

Pursuant to the announcement in the December issue that it would be a part of the policy of this journal to promote intimate relationships between the professions of dentistry and of medicine with this issue is added to our Departments that of Dentistry. Being a specialty of the healing art it is placed where it belongs, in a position of equality with the other specialties. The management is fortunate and happy to have obtained the co-operation of Dr. W. M. Robey in the conduct of this Department. His first editorial speaks for itself.

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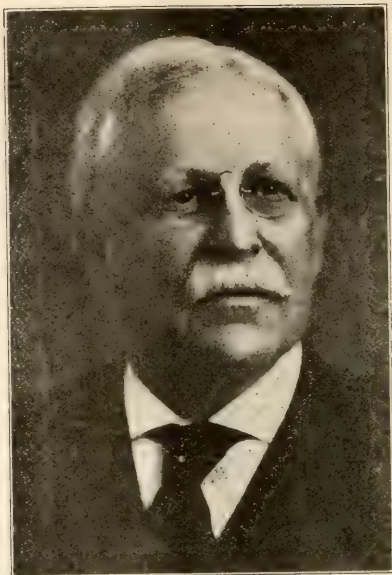
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To the Memory of
GEORGE BEN JOHNSTON, M.D., L.L.D.
 A Lover of the Poor
 A Friend of the Young Physician
 An Eminent Teacher
 and
 A Master Surgeon
 1852-1916

On the afternoon of December the twentieth, the eighth anniversary of the death of the one it commemorates, there was unveiled at the Johnston-Willis Hospital in Richmond this memorial tablet. Surely genius guided those who chose the inscription. Such a wealth of material was there from which to choose as to make it the natural thing to place in the bronze record some enumeration of the high positions to which his talents had won.

Jefferson might have had it inscribed above him that he was Governor of Virginia, Ambassador to France and President of the United States. Instead he chose to be remembered for what he had done for others: "Author of the Declaration of American Independence, of the

Statute of Virginia for Religious Freedom, and Father of the University of Virginia." And so, as Dr. Johnston would have wished, nothing is said about his having been the first surgeon to bring the blessings of Antiseptic Surgery to Virginia, of the many professorial chairs which he had adorned, or of his having been President of the American Surgical Association. He, too, chose to be remembered for what he did for others, rather than for the honors others were glad to heap on him in recognition of his greatness.

His love for the poor; his eminence as a teacher; and his mastery as a surgeon, are amply attested by a multitude of written records.

It is in his character of a friend of the

young physician that I would speak of him. This character he filled completely. He was ever alert to discover evidences of unusual promise in a young man, and eager to help with words of encouragement, with wise counsel, with professional influence, or with money from his pocket, toward the realization of that promise. When he referred a patient to a young doctor the transfer was unreserved; and he, unlike many of the high and mighty, was scrupulous to protect the interests and sensibilities of the younger man. He did not refer the patient because he was "too busy", nor because the ailment was too trivial engage his own attention.

And in the evenings, at his home or club, surrounded by young doctors who hung on his every word, he was the incomparable host. No one could so well instruct without pedantry; no one could so well adapt himself to every grade of society and intellect without for one moment losing the commanding dignity which ever sat upon his mien.

How many things we recall as having been learned from him! Once at The Jefferson he discoursed on the House of

Panza. How often he speculated on how different might have been our history had the Chesapeake and Ohio been the first road of iron to penetrate to the northwest territories! And how many times have we heard him quote from, "I never have seen Carcassonne"; this plaintive story of a peasant whose sole hope was to see Carcassonne, and, who eventually was charitably provided with funds, only to be mortally stricken on the eve of his intended departure! Realizing the truth, the plaint was changed to "I never shall see Carcassonne." The tragic poem made a deep impression on Dr. Johnston's mind. Throughout his life he was the means through whom many saw their Carcassonnes.

He loved helplessness and worthiness. He hated hypocrisy and greed. He held arrogance and servility in equal contempt.

His example was never more needed than now, when his profession shows so marked a propensity to "tend the cow of Isis for the butter she will yield."

His memory should be kept green.

—*Jas. M. Northington.*

Essentials of a Common Disease

DIABETES MELLITUS

WILLIAM ALLAN, M.D., *Charlotte, N. C.*

The sugar and starch of our food is digested, absorbed, and then stored in the body as glycogen, to be burned as needed. This internal combustion is effected by insulin, the hormone manufactured by the islands of Langerhans in the pancreas. In some individuals, due to previous infections or because of the wear and tear of overwork, or because of weak islands to start with, the pancreas fails to produce enough insulin. In such cases only part of the sugar taken is burned up, and the rest is passed out in the urine. This limitation of the ability to burn sugar in the body, because of insufficient production of insulin by the pancreas, constitutes the malady known as diabetes mellitus.

When sugar is found in the urine, it is necessary to assume that we are dealing with diabetes and the problem of the diabetic patient presents three steps for solution. We must determine: (1) Whether the glycosuria present denotes a real diabetes; (2) What glucose tolerance the patient has left; and (3) What diet, or what combination of diet and insulin, will suit this patient.

In real diabetes, glycosuria is always accompanied by increase in blood sugar and the giving of one-hundred grams (3½ ounces) of glucose followed by blood sugar estimations for three hours will answer our first question. About thirteen per cent of the individuals seen with glycosuria have no increase in blood sugar and show sugar after meals simply because they have a low renal threshold. Also, a certain number of cardio-renal cases excrete a small amount of sugar pretty constantly without any marked rise in blood sugar and without any limitation of tolerance. Occasionally, we see a case of renal diabetes in which sugar is always present in the urine with a normal blood sugar.

When laboratory facilities are not available, it seems proper to treat all glycosurias as genuine diabetes, for more than seventy-five per cent of the patients showing glycosuria are diabetics.

Our next problem is to determine how much sugar the patient can still burn, and this must necessarily be the starting point for any intelligent treatment. The simplest way to find this out is to gradually reduce the diet until the urine is sugar free, estimating the glucose value of the diet that will just keep it so. In making this estimate of the glucose value of the diet, it is, of course, necessary to add to the total amount of starch in the various articles of food sixty per cent of the total amount of protein and ten per cent of the total amount of fat by weight in this same diet. And, it might be said here, that **unless the patient is willing to get a pair of scales and weigh his food**, as directed, nothing will be accomplished. It is also possible to determine glucose tolerance by prescribing a diet with a known glucose value and estimating the output of sugar in the twenty-four hours' specimen of urine for several days. The difference between intake and output is the patient's tolerance. In cardio-renal cases, there may be a small amount of sugar in the urine pretty constantly; but, the difference between intake and output will often demonstrate no limitation of tolerance. Only after we have determined that our patient is diabetic, i. e., can only burn up a limited amount of sugar, and after we have determined what that amount is, are we ready to prescribe treatment.

The treatment is almost exclusively dietetic, and the diet must not contain more starch than the patient can burn. The prescribed diet should contain from three-quarters to one and one-half

grams (15 to 22 grs.) of protein per kilo (2 1/5 lbs.) of body weight and the amount of fat should not be more than twice as much as the starch. Thus, if a diabetic weighs 60K. (150 lbs.) and has a glucose tolerance of one-hundred and forty grams, his diet should contain from forty to ninety grams (1 1/3 to 3 ounces) of protein, sixty per cent of which must be reckoned as glucose. If one gram, (15 grains) of protein per kilo (2 1/5 lbs.) of body weight is used, then it will be necessary to put sixty grams (2 ounces) of protein in the diet and thirty-five grams (1 1/6 ounces) of this must be counted as starch, leaving only one hundred and five grams (4 ounces) of his tolerated amount to be supplied by starch and fat. In this problem, it is easiest to determine the protein first, and, three eggs, one hundred grams (3 1/3 ounces) of lean meat and eight ounces of milk will supply fifty grams (1 2/3 ounces) of protein. We still have a lee-way of about one hundred and five grams (3 1/2 ounces) of starch, and this can best be supplied in the shape of bread by giving three ounces of bread and twenty ounces of five per cent vegetables. Vegetables supply the bulk and most of us find it very difficult to be satisfied with any meal which does not contain bread.

The diet, then, as outlined so far, is:

	P	F	C
Lean meat, 3 1-3 oz.....	22	10	0
Three eggs	18	18	0
Milk, 8 Ozs.	10	10	10
Bread, 3 Ozs.	9	0	5
5% Vegetables, 20 Ozs.....	6	0	24
	65	138	88

This diet contains sufficient protein and will supply 954 calories which is about fifteen calories per kilo of body weight, or, only about half the heat units considered necessary to normal activity. To supply the other nine hundred calories necessary in order to give the patient a total of eighteen hundred calories, it is only necessary to add one gram (15 grains) of fat for each nine calories desired, or, a total of one hundred grams (3 1/3 ounces) of fat which

is contained in four ounces of butter. The complete diet, then, would contain about one gram (15 grains) of protein per kilo (2 1/5 lbs.) of body weight, a glucose value of one hundred and forty-one grams (4 2/3 ounces) with a fatty acid value of one hundred and fifty-four grams (5 ounces) which is considerable less than twice as much fat as sugar and should be safe from the standpoint of producing acidosis. This diet would supply eighteen hundred and fifty-four calories, or thirty calories per kilo of body weight.

If the diabetic should be obese or much under weight, the ideal body weight for height may be used instead of the actual body weight. With the body weight and glucose tolerance known, a suitable diet containing about one gram of protein per kilo with a glucose value not above tolerance, a fatty acid value not more than twice that of glucose, and supplying sufficient calories to furnish thirty per kilo, can almost always be worked out. Prescribing diets for diabetics will, of course, necessitate some knowledge of the composition of the various foodstuffs.

If the glucose tolerance is so low that a comfortable diet cannot be prescribed, the thing to do is to give a rational diet which will be comfortable to the patient with enough insulin to take care of the extra food. Thus, in the example cited above, if the patient's tolerance had been seventy grams instead of one hundred and forty, the same diet could be given with enough insulin to burn up seventy grams of starch a day. Each unit of insulin is supposed to burn between two and three grams of starch, so that to burn seventy grams of starch would require between twenty-three and thirty-five units of insulin. It is better to start giving one unit of insulin for each three grams of starch to be burned and gradually increase until sugar disappears from the urine. In the above example, if it were desired to burn seventy grams of starch daily, seven units of insulin could be given from ten to twenty minutes before each meal and the amount increased every few days, to eight, nine or ten units before each

meal, depending upon how soon sugar disappears from the urine. It is better to examine urine about two hours after meals to see whether or not the insulin has burned up that meal completely. Should the insulin make the patient feel nervous and uncomfortable, it may be given just as the meal is started, instead of before meals and, when necessary, the diet can be so arranged that most of the carbohydrate and all of the insulin is taken with breakfast and supper, as in the case of laborers and school children who cannot get home to lunch. Some member of the family can always be taught to give these hypodermic injections of insulin. And the patient or

some member of the family should always be taught how to examine the urine daily for sugar and diacetic acid. I find the little manuals written for diabetics a great aid in educating the patient and this is always the most difficult as well as the most important step in the treatment of diabetes. F. M. Allen has said that a diabetic lost sight of is a failure, for after the proper diet has been worked out and the patient seems thoroughly instructed, he will sooner or later get off the track, so the only safe thing to do with diabetics is to insist that they report at stated intervals for supervision.

DEPARTMENTS

Dentistry

Family Matters.

W. M. ROBEY, D.D.S., *Editor*

As the representative of Dentistry it is with pleasure that we endorse the policies of Southern Medicine and Surgery as announced editorially in the first issue of the new publishers.

This department is evidence of the good faith of the publishers. It is an innovation, but should be of great benefit to the professions in this section reached by this journal, in coordinating their work and thought.

Dentistry is a child of medicine, although this has not been realized until the most recent years, except by a limited few. It has grown as a child without parental care, but has fallen into interested hands and has made such progress that the parent has difficulty recognizing its offspring. It is the same story of youth and age.

Our objects are the same, the development of the very inexact science of healing and health, a science so inexact, the human machine so complicated, the amount of work demanded so great, that

to hesitate long enough for a little controversy over family tree is too great a waste of precious time and energy, while human beings suffer and die.

Team work is the desire, and honest frank discussion of mooted questions thereby helping your fellow practitioner and through him your fellow man.

Accordingly we start the ball rolling by approving most thoroughly the article in the December issue under the Department of Roentgenology by Dr. R. H. Lafferty. His argument as to who owns the X-ray films is exactly in agreement with the contentions of the dentist. The patient is seldom interested in the films or plates, but in the findings. The separate findings from each specialist given verbally to the patient are of slight value to the diagnostician. A patient with a verbal report, and a bunch of films giving instructions to a specialist as to proper procedure, is a picture that requires no discussion. Make your report to whom it is due, file your duplicate films in the laboratory, give your patient a set, if you will, as evidence of your industry, and pass the responsibility along to whom it is due. Fairly simple, isn't it?

It is,—to the roentgenologist who is thoroughly familiar with the subject under consideration. But, unfortunately, this neglected child of Medicine, Dentistry, seldom receives its reports except as described above, verbally through the patient, a set of films not always good, and instructions as to procedure. Legally, morally and professionally the responsibility rests upon the surgeon and not the roentgenologist.

But we are not criticising. Why specialize, if a man can encompass the whole science of the healing art? Therefore, while agreeing that the roentgenologist may be the most proficient with one or more subjects of human anatomy and pathology, our experience is that as a whole, the roentgenologist has had his principal attention on other subjects than the mouth and teeth, properly so, as the dentist has been plugging along the same line for the same period of time, confining his efforts to the mouth and jaws alone. Is it then unreasonable for a profession acknowledgedly mechanical, largely an art; a profession which is partially educated in the medical schools of this country, to claim a superiority in a field with the narrow limits of the teeth and jaws, and to demand the same freedom of action that is granted other specialties of medicine?

At the same time we should court consultations, and do, although this word has appeared in the dental vocabulary in very recent years, and is infrequently used even now. A dentist or a physician who is so temperamental that he fails to consult when necessary, is a most dangerous member of the profession. God pity the man who falls into such hands.

Controversy destroys, while frank, open discussion should build our usefulness.

Pediatrics

FRANK HOWARD RICHARDSON, M.D., *Editor*

The field of pediatrics,—whether practiced by the specialist who limits his work, or by the general man who sees by far the greatest number of children sick or well,—is threefold. There is re-

search work; there is the diagnosis of disease in children; and there is the treatment of the child, sick or well, curative and preventive by drugs, general management, nutrition, et al.

For most of us, research as ordinarily understood is something to be left to the trained research worker. We have so much of proved worth that we are not yet applying, that research work, important and fascinating as it is, does not call us as imperatively as it might if practice had come nearer to keeping up with known principles. Diagnosis, except in the smaller percentage of cases, is not so different in the adult and in the child that the well-equipped general practitioner need feel himself at a loss when brought face to face with the problem of ferreting out the cause of illness in his little patients, any more than he does when he faces the same task in his adult clientele. When it comes to treatment, however, the case is manifestly different.

There are certain general phases of the healing art that should be familiar ground to the man who is called upon to treat children in any capacity, and in any phase of medicine, whether directional, preventive, or curative. These are so different and distinct from what is required in the handling of adults, that it is not out of place for such a column as this to bring them occasionally to the attention of its readers, in the hope that the mere mention of them will stimulate an interest that cannot fail to be of very real benefit to the children who are dependent upon them for their medical direction.

(a) The first of these prerequisites for the intelligent treatment of children, is a familiarity with the newer knowledge of breast feeding. What has been done in Minneapolis, Nassau County, New York and other places, to make breast feeding practically universal among a geographical group, ought to be made familiar to every man who has to do with babies, together with a working knowledge of how he may obtain similar results among his own clientele. Artificial feeding, except in rare cases, is as out-of-date as the dodo;

but until a general knowledge of this fact has become the possession of the average medical man, we are going to continue to have the amazing and appalling contraptions that are periodically paraded before us in the name of new up-to-date infant feedings,—coupled with the equally appalling infant mortality rates that accompany such travesties upon science.

(b) There should be a simple working knowledge of how to make a complementary feeding for use in reinforcing a temporarily diminished breast supply, whenever this frequently occurring phenomenon transpires. When it is realized that a baby may safely be offered a boiled mixture of milk-and-water (half and half), with a small amount of sugar added, any time after completing a breast-feeding, and allowed to take as much of it as he wants to, premature feedings will be rare, instead of the commonly occurring reproach to medicine that they constitute today.

(c) Anyone who deals with infants or older children ought to have a fair knowledge of what constitutes good, clean, healthy and healthful, uncontaminated milk. This is essential for satisfactory growth; and no conceivable process, whether of pasteurization or even of boiling itself, can hope to make dirty milk clean, or unhealthful milk healthful. If milk is questionable, by all means let us boil it. But let us do so with a full understanding that boiling it does not make it fresh, nor clean it, nor put back into it the vitamins that old age has killed off. And let us be intelligent and informed enough to fight to the last ditch against the prevalent idea that commercial pasteurization, even in the comparatively rare instances where it is properly performed, relieves a community from the duty of safeguarding its milk supply, or renders such milk supply satisfactory for the nutritional needs of its children.

(d) There ought to be a realization that there is an appalling lack of abounding good health among the children of the community, which will never be adequately diagnosed, let alone adequately treated, until the scale and the

weight-for-height table are at least as freely used in the consulting room as is the clinical thermometer. When once this conception becomes a universal one among us, it will be but a simple matter for us to master a definite technique leading toward the returning of this submerged third to their rightful heritage of vitality.

(e) If the preventable diseases,—smallpox, typhoid, diphtheria, and (now) scarlet fever are ever satisfactorily to be diminished, not to say completely eradicated, there must be an acceptance upon the part of every one of us of the duty of bringing to the attention of his clientele the fact that the preventive treatments are all safe, effective, cheap, and relatively harmless. All of this has been proved time and time again, and is being preached to the laity by lay organizations; but until the individual doctor is so impressed with the truth of it that first he protects himself and his family, and then calls to the attention of each of his mothers and fathers their duty in the matter, the fight against the preventable diseases will be but an ineffectual one.

(f) Some familiarity with the mental processes of the child, his proneness to the formation of faulty mental and emotional attitudes and habits, and the way in which his mental processes differ from those of the adult, would seem almost indispensable to us in our dealings with the children in our practices. And yet, how many a mother dreads even the rigors of the perennial spring house-cleaning less than she does a simple trip to the doctor's office with one of the children! Brethren, these things ought not so to be,—nor is there any need of their so being, if we will but take a tithe of the thought to pleasing our little patients in equipping waiting room and office, that we do to pleasing ourselves in the outfitting of our little surgery or our laboratory alcove!

This column will consider these topics, and similar ones, from time to time. There will be no attempt on the part of the pediatric editor to tell better internists than he can ever hope to be how to differentiate between murmurs; or to

instruct the surgeon in the intricacies of the removal of the child's appendix. There will be an attempt, however, to bring to the attention of its readers who are dealing with children, some of the practical points that will make the application of their already-acquired knowledge easier when it comes to the particular case of the "difficult" child, whether temperamentally "difficult," or simply hard to handle because of the very difficulties inherent in his age and immaturity, as compared with the adults that make up a larger percentage of their practices. Theory will be given the respectful "go-by"; practice alone, and essential practicality, will be the touchstone applied before admittance to this department.

Black Mountain, N. C., Jan. 1, 1925.

SURGERY

A. E. BAKER, M.D., *Editor*

It is a well recognized fact that early, uncomplicated peptic ulcers should first receive medical treatment and that a considerable number of patients are cured, or at least have a long period of quiescence. Dr. Lund of Boston in "Surgical Treatment of Chronic Ulcer of the Stomach and Duodenum" stresses the technique and methods of dealing with the different varieties of ulcers. He states that:

"The essential points in gastro-intestinal surgery are the avoidance of soiling during the operation, the avoidance of tension on the line of suture subsequent to operation, the avoidance of kinking, and above all, the avoidance of hemorrhage.

Soiling is avoided and the accurate apposition of the tissues is made much simpler and easier by the use of clamps. The one danger of the clamp—secondary hemorrhage after the operation—may be avoided by careful and accurate placing of every suture. The author uses a long, straight, round needle, threaded with No. 2 chromic gut. This suture material is coarse enough to be strong and to hold the tissue well and does not become absorbed too soon. The

clamps are removed before the first layer of sutures is completed to determine whether there is any hemorrhage. The operation is easiest in the thin subject whose stomach hangs low. When the stomach is high and the mesentery is loaded with fat, it is of advantage to carry the incision up to the xiphoid. The opening in the mesocolon should be as close to the root of the mesentery and as far from the colon as possible.

Vomiting is a rare and unimportant symptom in duodenal ulcer. Excision of a duodenal ulcer without gastro-enterostomy should never be done as it merely substitutes a suture line for the ulcer without changing the abnormal condition which produced the lesion. With the exception of the hyperacidity we do not know definitely what these conditions are.

Resection of a **duodenal ulcer**, even if the operative risk is only slightly increased, is inadvisable because there is no danger of malignant degeneration in this lesion. On the other hand, ulcers on the pyloric side of the stomach, according to the Mayos, carry the potential danger of carcinomatous change.

Ulcers on the lesser curvatures are less apt to be benefited by gastro-enterostomy. Their excision is difficult and often fatal. They are best treated by Balfour's method—burning the ulcer out with the cautery, inverting and suturing, and performing a gastro-enterostomy. The ulcerated area should be destroyed without carrying the cautery into the surrounding healthy tissue. The Balfour cautery excision is indicated especially in cases with hemorrhage, and in these it should be preceded by blood transfusion.

Mayo obtains a cure in 90 per cent of the cases of **duodenal ulcer** by gastro-enterostomy and believes that the use of the Finney or Horseley pyloroplasty will effect a cure in another five per cent. In smaller ulcers on the lesser curvature, Balfour's operation (cauterization and gastro-enterostomy) will cure in 90 per cent.

In the author's experience ulcers at the **pylorus** or **just on the gastric side** heal as well after gastro-enterostomy as

those of the duodenum. However, if resection is safe and easy, that is, if the stomach can be drawn well outside the abdomen, it should be done.

Chronic indurated ulcers without obstructions, single or multiple. The majority of duodenal ulcers fall in this class. Gastro-enterostomy alone will cure a large percentage of these cases. More radical methods are generally unnecessary and unwarranted. This group includes the chronic perforating type of ulcer without hemorrhage but with extensive adhesions and sometimes with a considerable inflammatory mass. In many of these cases radical resection would be hazardous, especially if resorted to at the time of the primary operation. A two-stage procedure is best.

Cases with duodenal stricture or so-called pyloric stenosis. In this group gastro-enterostomy is the ideal operation. When, because of prolonged starvation and dehydration due to marked stricture, the patient is in poor condition at the time of operation, preliminary hypodermoclysis, blood transfusion, and operation under local anaesthesia will aid in obtaining a successful outcome.

Cases in which severe hemorrhage has occurred. Gastro-enterostomy is not a guarantee against recurrence of hemorrhage which may prove fatal. If the patient's condition permits, excision of the ulcer area is desirable in this group. If the danger of radical excision seems too great, gastro-enterostomy may be sufficient or may be done as a first step of a two-stage operation. The average duodenal ulcer heals within from two to four weeks after gastro-enterostomy has been performed, and in cases with hemorrhage gastro-enterostomy may effect a cure without return of the bleeding."

Urology

A. J. CROWELL, M.D., *Editor*

Malformations of the Kidneys and Associated Structures.

In a very timely article published in the *Archives of Surgery*, Vol. 9, No. 1, July, 1924, Dr. C. Harold Jameson, formerly of the Urologic Clinic of the Pe-

ter Bent Brigham Hospital, mentions the following valuable points. Classification may be made according as follows: (1) Form, (2) Position, (3) Number, Concerning the Kidney itself, (4) Variations in the number of ureters; (5) Abnormalities in the Renal Vasculature.

While development defects of the kidneys are recognized the fact that they are often the cause of **obscure abdominal pain** is not generally known. Routine examination is usually without positive value and is generally negative. Many exploratory laparotomies are done in such cases without gaining knowledge of the underlying pathology. In Dr. Jameson's report of 13 cases abdominal pain has been the outstanding symptom. Symptoms of urinary infection have been conspicuously absent; this has made the diagnosis obscure. Exploratory laparotomy was done in 50 per cent of the cases in this series.

Important Conclusions.

(1) Anomalous development of the kidney and associated structure occurs with greater frequency than is generally appreciated.

(2) The symptoms are ill-defined and a urinary pathologic condition is frequently absent.

(3) In every case with ill-defined abdominal symptoms, wherein the diagnosis remains uncertain, the patient should be subjected to cystoscopic examination with pyelography before laparotomy is performed.

Operative Experiments to Demonstrate the Power of Regeneration of the Vas Deferens by Dr. H. C. Rolnick in *Archives of Surgery*, Vol. 9, No. 1, July, 1924.

For the purpose of determining the ability of the vas deferens to regenerate itself and restore continuity of its lumen, Dr. Rolnick performed forty-eight operations on twenty-five dogs. Summary of the Work and Dr. Rolnick's Conclusions were as follows:

Summary—The vas is able to regenerate and undergo repair following extensive trauma in the form of multiple

longitudinal and oblique incisions. Following multiple transverse incisions restoration of the lumen does not occur.

Ligation of the vas with absorbable material is only a temporary measure.

In all six experiments in which the vas was ligated with catgut restoration of the lumen took place. This is also true in a certain number of cases in which non-absorbable material was used.

The presence of a foreign body in the vas for a considerable period of time does not in itself produce occlusion of the lumen: neither does occlusion occur when the vas is sutured into the skin or exposed outside of the skin for a number of days.

The vas will regenerate itself if divided or resected for as much as $\frac{1}{2}$ inch of its length provided the sheath is left partly intact or if reunited if severed. Without the sheath regeneration occurs only in a small percentage of cases.

Suture of the severed ends of the vas do not require any special technic. The one point of particular importance is the coaptation of the severed ends of the sheath.

Conclusions—The results gained in these experiments emphasize—(1) The regenerative powers of the vas and its ability to resist trauma and restore continuity of its lumen. (2) The importance of the sheath of the vas acting as a splint and making a patch for epithelization. (3) Possibility of restoration of lumen which is enhanced when the deferential vessels are not injured for they act as splints aside from supplying blood to the vas.

Dr. Rolenick found it impossible to demonstrate the minute structure of the epididymis beyond the globus minor by injecting sodium iodide. He was also unable to demonstrate the minute structure of the testicle by the same method.

WORDS OF COMMENDATION

My dear Northington:

I have intended all along to write a line, congratulating Southern Medicine and Surgery on its new editor. Northington, many men editing Medical Journals are mules attempting to do the work of horses. Now I consider you a horse in a horse's place and I shall expect you to give the profession in North Carolina a journal such as it has not had within my modern recollection. The Old North Carolina Journal edited by Wood forty years ago was a fine publication, as my ancient memory serves me. I don't know what I can do to help you because I have passed the age of writing; and most of my expression, which is considerable, is by the word of

mouth; but I shall be constantly making all good wishes for you and your success in your new venture.

With sincere personal regard,

Your friend,

—Cyrus Thompson, M.D.

Jacksonville, N. C.

January 10, 1925.

Dear Northington:

I was delighted to receive your greetings in the shape of the first number of your magazine. It is certainly a good-looking publication. I showed it with great pleasure to a number of your old friends. I am doing a bit of research, assisting a couple of new men to their Ph.D's. Boyle and the cardiograph have been out of shape since summer, so we have been having a devil of a time.

We are delving into Quinidine now.

If you wish, I would be pleased to give you a skit on some unpublished notes of interest and value.

The old campus is rapidly changing. Our old club which you called "The Old Drunks' Home" is making its last stand against the encroachments of new buildings. We have a new library building, a new stadium, and some new hospital buildings. More anon.

Sincerely,

—*Ralph Edwin Morris, M.D.*

Graduate School, University of Minnesota, Minn.

December 27, 1924.

Dear Northington:

I have just examined the December number of "Southern Medicine and Surgery," the first copy appearing under your editorship, and desire to express to you my congratulations. Your statement of policy is straight, sound and sensible. Under the principles you have set forth, you may count on my support and encouragement.

Sincerely,

—*Hubert A. Royster, M.D.*

Raleigh, N. C.

January 10, 1925.

Jan. 6, 1925.

My dear Dr. Northington:

I have twice read your editorial in the December number of Southern Medicine and Surgery, outlining the future purpose and policy of the Journal.

It should be a source of real pride and satisfaction to every medical man living in the Carolinas to note the high ethical and educational plane upon which you have charted the course of the Journal.

We hear so much these days of the wonderful material development of the Carolinas—how the wealth of the two states is being piled higher and higher each day—until now with truthfulness we can boast of being one of the richest sections of this terribly rich nation.

Let us pause for a moment and hear the plaintive cry of the ages—as expressed in a simple verse—

"I wanted the gold and I got it—

Came out with a fortune last fall,—

Yet somehow life's not what I thought it
And somehow the gold isn't all."

These necessary and commendable material developments on farm and in factory but increase the responsibility and temptation of the medical and surgical men of this section.

It is too often too easy to operate on the rich; too hard to do the wise, unselfish, and helpful thing for the poor.

The medical profession of these sister states, the Carolinas, in training, education, experience and loyalty to the highest ethical standards of the profession will favorably compare to a like number in any state in the Union.

Why shouldn't they have a Journal of medical and surgical science which will stand for and express the work and desires of a group whose work can never be measured and standardized in the market-place;—but must find its reward in the satisfaction of a duty performed, and the continued pursuit of light and knowledge and at last—Truth.

Allow me to gratefully commend you for so clearly setting forth the ideals of the profession, and for the assurance that the Journal shall deal with the vital things which affect our profession and to encourage men of ability to write and publish in a Journal worth while their work and results, where such an effect will count most.

Sincerely and gratefully,

Your friend,

John Hill Tucker, M.D.,

Charlotte, N. C.

My dear Dr. Northington:

I regret this delay in replying to yours received informing us that you are now editor of the Journal. You have my best wishes and hearty cooperation in making a gratifying success, which I feel awaits you in the future.

For some time I have been editor of Surgical Department and it has always been a pleasure to have my contributions in for each issue of the Journal. Only a very few times have I failed to measure up to my responsibility. I am enclosing herewith my contribution to the January issue.

I feel a personal interest in assisting

you in any way I can for the betterment of the Journal, so do not hesitate to call upon me at any time I can serve you. With best wishes, I am,

Yours sincerely,

—A. E. Baker, Sr., M.D.

Baker Sanatorium, Colonial Lake, Charleston, S. C.
December 31, 1924

My dear Major Northington:

I notice in the December number of Southern Medicine and Surgery that you have bought that publication and will edit same. Please let me extend congratulations and bespeak for your enterprise the most abundant success.

I am interested for several reasons; one of which is that I have known the Journal for many years, away back when the lamented Thomas F. Wood edited it. Another is my personal feelings toward you, beginning when we marched together under the Stars and Stripes with the American Expeditionary Forces. Those were both trying and glorious days never to be forgotten. Still another reason is that the Journal is our only hope in North Carolina. Let's make it the best periodical of its kind in the whole country. I believe you will. Cut out all questionable advertisements, conduct it on the highest plane professionally and it must follow, as the night the day, that the profession will rally around your standard. Your education, your training and your energy especially fit you for the responsible role you have undertaken.

In memory of Base Hospital 65, I remain,

Sincerely yours,

—John Wesley Long, M.D.

Wesley Long Hospital, Greensboro, N. C.
January 7, 1925.

Dear Dr. Northington:

When I opened my mail this morning and saw Southern Medicine and Surgery in its new dress, I felt like sitting right down and congratulating you. I like its color and general make-up and especially the table of contents right out in front as if you were proud of it. I do not know of a better looking journal than it is in its present form. It is artistic,

dignified and business like.

I also wish to commend the program that you have set for yourself in the editorial pages. Our South needs encouragement in standing on its own feet medically so to speak. The history of Medicine shows that we have the capacity, but we lack the assurance. I have only one small criticism to make. You know it is so easy to criticise. One gets the impression that you feel that the journal is a North Carolina journal. The territory covered by the Tri-State Medical Association is essentially one State from a medical point of view. Virginia and the Carolinas have the same medical problems. Their doctors have the same training, have the same background of history and are influenced by the same clinics. We in Virginia feel that the boundary line that William Byrd and others ran a number of years ago, has no existence in the domain of Medicine. We are just as proud of W. deB. MacNider as we mean to be of Southern Medicine and Surgery.

Sincerely yours,

—M. Pierce Rucker, M.D.

Medical Arts Building, Richmond, Va.
December 19, 1924.

Dear Doctor Northington:

The appearance of Southern Medicine and Surgery in its attractive new form the other day, was my first intimation of the change in its editorial direction. I should like to extend to the magazine my congratulations upon its acquisition of such a pilot through the shoals of medical journalism. At the same time, may I congratulate you upon the opportunity for real service that presents itself to you, in this capacity.

I believe that our biggest task today is that of postgraduate education,—by which I mean the instructing of those of us already in the ranks, as contrasted with undergraduate medical education. This task devolves principally upon the medical journal and the county society; for the effort of the postgraduate schools is proportionately practically negligible as yet. As the secretary of the county medical society hardly retains office long enough to learn the

ropes, in program making, the medical editor remains the only agent who, in the nature of the case, can plan for his constituency a well-thought-out course of graduate education. This makes his job one of immense importance, if he so conceives of it.

You are evidently undertaking the work in this spirit; and your previous experience, as Doctor Hall so gracefully words it, peculiarly qualifies you for this important duty of medical editorship. The plan of the editorial board, with its various departments under editors specializing in these respective fields, lends itself especially well to such a service. Your announcement of a desire that our section of the South should cease to accept the pronouncements of the medical pundits of other parts of the country as so much inspired writ, and of a determi-

nation to give the proper emphasis to work done by worthy men among us, has a ring to it that is most satisfying.

Please rely upon me to do everything I can to help, as long as you care to call upon me. On the other hand, please feel perfectly free to replace my services with those of anyone whom you feel may be of more aid to you in carrying out your plans. In either event you may rest assured of my continued interest and support,—whether as an associate editor or as an interested reader and sincere well-wisher.

With highest personal regards, and with the season's kindest greetings, I beg to remain, Sir,

Faithfully yours,

—Frank Howard Richardson, M.D.

Black Mountain, N. C.

January 1, 1925.

News Items

The Polk County Medical Society at its recent annual meeting elected the following officers: President, Dr. E. P. Mallett; vice-president, Dr. B. F. Cliff; delegate to the meeting of the N. C. State Society Meeting, Dr. Guy E. Dixon; alternate, Dr. W. E. Brackett, all of Hendersonville, N. C.

The Seaboard Medical Association, which recently met at Rocky Mount, North Carolina, elected the following officers for the coming year: President, Dr. Robt. L. Payne, Norfolk, Va.; first vice-president, Dr. George A. Caton, New Bern, N. C.; second vice-president, Dr. L. Horrell, Suffolk, Va.; third vice-president, Dr. W. I. Fleming, Rocky Mount, N. C.; fourth vice-president, Dr. R. M. Cox, Portsmouth, Va.; treasurer, Dr. George A. Caton, New Bern, N. C.; secretary, Dr. Clarence Porter Jones, Newport News, Va. The next meeting of the association will be held in Norfolk, in December, 1925.

The staff of Broadoaks Sanitarium, at Morganton, N. C., has been enlarged, Dr. Erasmus H. E. Taylor recently having gone there. Dr. Taylor is the son of Dr. Isaac M. Taylor, the late head of the sanitarium. He is a graduate of Wake Forest Medical School, the University of North Carolina, and Tulane, and has just completed his internship at the Charity Hospital in New Orleans.

At the annual election of officers of the Guilford County Medical Society held on December 4th, the following were elected: Dr. W. J. Meadows, Greensboro, N. C., president; Dr. R. A. Schoonover, Greensboro, N. C., vice president; Dr. H. L. Breckmann, High Point, secretary and treasurer.

Delegates to State Society—Dr. C. W. Banner, Dr. W. M. Jones, Dr. J. T. Burrus, Dr. J. T. J. Battle.

Alternate Delegates to State Society—D. W. Holt, A. T. Smith, W. F. Cole, R. A. Schoonover.

The past year of the Guilford County

Medical Society has been one of the best in its history, from the standpoint of programs and attendance. The papers have been good, up to date, and instructive. At the September meeting Dr. Seale Harris, of Birmingham, was one of the out-of-town guests on the program and read a paper on "The

Treatment of Diabetes."

The membership of the Society is now over the one hundred mark, and, quite naturally, the members are looking forward to a good year. Every effort is being made to stimulate each and every member to activity so as to make this society one of the very best in the state.

BOOK REVIEWS

A TEXT-BOOK OF PATHOLOGY, by W. G. McCallum, Baltimore. W. B. Saunders Company.

New light is shed on the important problems involved in rickets, and the new attitude toward diabetes growing out of the discovery of insulin is dealt with in an instructive manner. The discussion of the leucocytozes of the several types is particularly noteworthy as supplying important information on changes which are investigated in nearly every attempt at diagnosis, both of primary diseases and of complications as they develop. The chapter dealing with the organs of internal secretion give the present state of real knowledge of these extremely important organs, which will be found to be quite a different matter from the statements put out by many houses and "laboratories" who allow their enthusiasm or their interest to paint their pictures in alluring colors. The whole book is on the plane to be expected from Hopkins or MacCallum.

MEDICAL CLINICS OF NORTH AMERICA, November, 1924. W. B. Saunders Company.

This number contains information on subjects of such interest as pneumonia, non-infectious leucocytosis, essential hypertension, digitalis, stupor and asthma. The authors are all members of the faculties of the medical schools of Philadelphia. This is sufficient to indicate the real value of the number.

INTERNATIONAL CLINICS, Volume IV., 23th Series. J. B. Lippincott Company.

Among the important matters discussed is "The Food Factor in Pellagra," and it is worthy of note that one of the conclusions is, "The unbalanced diet does not seem to be the only factor in the etiology of pellagra," and even more interesting to see it written that "it is probably due to an infection of some kind." Dr. H. H. Hazen well emphasizes the fact that "The diagnosis of eczema should never be made." Periodic health examinations, insulin (by Dr. Banting himself), syphilis of the thy-

roid, the effect of tonsillectomy, and mental disease in childhood are among the other subjects of universal interest.

DISEASES OF THE HEART, by Dr. Henri Vaquez, Paris, and George F. Laidlaw, M.D., New York. W. B. Saunders Company.

At once it strikes you that this is an unusually large medical book for \$8.50 in this year of grace. One is tempted to speculate as to the explanation. Is the author content with smaller profits than our own medical arbiters, or has he not heard of the possibilities. The introduction is fine. "There is always a place for the treatise which represents the observations and judgment of one competent and experienced student." The forced conclusion that Dr. Thayer, from all the resounding terms of scholarship, chose the word student to carry his eulogium is a sermon in itself.

Could anything be more charming than this from the author's preface, itself a quotation from Senac. "It seems that some authors think only of unburdening their memories and of giving us a journal of their reading. These are the authors who have read much and thought little and who think themselves rich because they know the source of riches."

The book follows the usual rule of continental authorities of the first order in recording the author's own experience and opinions.

MANUAL OF PSYCHIATRY, by Paul E. Bowers, M.S., M.D., U. S. Public Health Service. W. B. Saunders Company.

The preface reads like a real book. He says "So far as possible conjecture and supposition have given way to reliable conclusions and data." Rightly or wrongly the idea has grown up among other medical men that psychiatrists are unnecessarily vague. Certainly they speak a language which is difficult or impossible of understanding to us others. Now I turn to the discussion of paranoia to see if this one follows the rule; and I find this:

"Definition: Paranoia is a chronic, slowly

progressive, incurable mental disorder, characterized by systematized delusions which are built up in more or less logical forms. There is but slight tendency to mental deterioration."

Now for Manic-Depressive: "The manic depressive psychoses are recurring mental disorders which are characterized by periods of depression and excitement."

I can understand such terms. Not a word has been said about complexes.

I shall read this book through.

ESSENTIALS OF PRESCRIPTION WRITING, Third Revised Edition, by Cary Eggleston, M.D. W. B. Saunders Company.

Many of the books on this subject are written very much on the order of the "Formularies," put out by interested commercial houses. In this instance an author with an international reputation has deemed the ordering of the administration of drugs worthy of his attention. Most likely his own experience with the confusion as to the dosage of digitalis, including that of drops with minims; inspired the work. Read it and use it.

LABORATORY GUIDE IN HISTOLOGY, by Leslie Brainerd Arey, M.D., Northwestern University Medical School. W. B. Saunders Co.

This little guide is written to save the time of the student and to prevent the misdirection of his energies.

It is well conceived and clearly executed and should serve to meet the purpose in a happy way.

OPERATIVE SURGERY, Vols. IV. and V., and Index, by Warren Stone Bickham, M.D., F.A.C.S., New York. W. B. Saunders Com-

pany.

These volumes conclude the publication of this monumental work. Few such productions have come off the medical press in recent times. These volumes deal with the colon, and genito-urinary apparatus, operations on the newborn and those for the correction of certain deformities. The index is a real joy. It is the fitting climax of a valuable operative surgery, affording a ready means of using a work which is usable and useful.

MANUAL OF DISEASES OF THE NOSE, THROAT, AND EAR, by E. B. Gleason, M.D., LL.D., University of Pennsylvania. W. B. Saunders & Company.

A sentence in the preface catches the eye. "The author sincerely regrets that it is necessary to increase the number of pages." Who would have thought a professor in a big medical school could be so considerate? It preposes the reviewer in favor of the volume. Recommendation of the local use of 10 per cent silver nitrate strengthen this prepossession.

It is to be regretted that, in the index, there is not included, **Tonsillectomy, indications for.**

PHYSICAL DIAGNOSIS, by W. D. Rose, M.D., Little Rock. C. W. Mosby Company.

The number of books on physical diagnosis is so great as to make choice between them a matter of considerable difficulty. In this work a feature to be especially commended is that of stating after each method of investigation **Object and Technic**. This impresses the examiner with the necessity of thoroughness, and freshens his perhaps waning enthusiasm. It is well thought out and so well written as to afford literary entertainment.

Miscellaneous

SULPHIDES PROVE GOOD REFLECTORS OF ULTRA-VIOLET.

Put Rays on Right Spot, But Scatter Light and Heat That Burn, Good for Treating Throat With Sunlight.

"What is the best material for making laryngoscope mirrors?" was a question the Bureau of Standards undertook to answer. A laryngoscope is used in the treatment of the throat by means of

sunlight, and in sunlight it is the ultra-violet rays that do the good, while the abundant visible light and heat rays do no good and are apt to cause burns. Hence what is wanted is a surface that will be a good reflector of ultra-violet rays, but will scatter or absorb light and heat.

The Bureau of Standards found, as the result of an investigation, that sulphides of certain metals give the results desired. These sulphides have a high

metallic lustre, and proved to have a high selective reflection of the ultra-violet rays and lower reflection of the visible and infra-red rays, which is just the opposite of the reflective properties of the metals.

The results of these tests are reported in Scientific Paper No. 493 of the Bureau of Standards, entitled "Ultra-violet Reflecting Power of Some Metals and Sulphides." Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. The price is 5 cents, cash.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following open competitive examinations: Junior Medical Officer, Assistant Medical Officer, Associate Medical Officer, Medical Officer, Senior Medical Officer.

Receipt of applications for these examinations will close on June 30, 1925. They are to fill vacancies in various branches of the Government service.

The entrance salaries range from \$1,860 a year for junior medical officer to \$5,200 a year for senior medical officer. Higher-salaried positions are filled through promotion where practicable.

The eligibles resulting will be placed on registers and certified according to their qualifications. Eligibles are desired who are qualified in general medicine and surgery and, in addition, there is need for eligibles in a large number of specialties which are named in the printed announcement.

Competitors will not be required to report for examination at any place but will be rated on their education, training and experience.

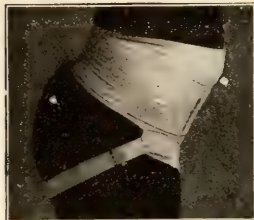
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**Butter-Nut
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That is irresistible to folks who really
know good bread

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Coughs and Colds

that tend to linger and fail to respond to remedies usually employed, almost always owe their persistence to inability of the body to restore a physiologic balance. Restorative and reconstructive treatment is essential and the ideal remedy is

Gray's Glycerine Tonic Comp.

(Formula Dr. John P. Gray)

A third of a century's successful use of this widely employed reconstructive has shown countless medical men that Winter coughs and colds will not linger, if they use Gray's Glycerine Tonic Comp. from the beginning.

Used in doses of two to four teaspoonfuls three or four times a day, this dependable tonic not only increases the vitality and resistive powers of the whole body, but through its pronounced influence on the pulmonary circulation promotes the physiologic activity of the local tissues and enables them to overcome congestion and inflammation.

The Purdue Frederick Co.

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The Psychological Effect

It is admitted that the psychological effect of a remedy is an important factor in its physiological action, especially in nervous depression and neurasthenic conditions generally. For this reason

ESKAY'S NEURO PHOSPHATES

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with its peculiarly pleasing physical properties is a most valuable form of the glycerophosphates. It is exceptionally palatable and patients do not tire of it on continued use, an important consideration in chronic conditions where persistent medication is necessary.

What Part Does Anemia Play in the Symptomatology of Pernicious Anemia?*

HENRY A. CHRISTIAN, M.D., *Boston*

If one studies the records of patients with pernicious anemia, he is struck with the very great frequency of incidence of disturbances other than the reduction in number and abnormality in appearance of the red blood corpuscles. Moreover, a number of these disturbances persist, even though during a remission the blood returns to a state of being practically normal. Also it is true that some of these disturbances antedate any evidence of much, if any, anemia and not infrequently these other disturbances markedly incommode the patient for quite long periods of time when, though the anemia is definite, it is relatively but slightly marked. All of this naturally raises the query as to whether the actual anemia is any very great factor in causing the symptoms of pernicious anemia until the stage of a very low red cell count is reached, when we have symptoms that one might reasonably associate with the great reduction in the red cells that reach the tissues as carriers of oxygen and removers of carbon dioxide.

Perhaps the change most constantly found in patients with pernicious anemia is an absence of free hydrochloric acid from the gastric juice. This is found with such very great frequency that the diagnosis of pernicious anemia, when free hydrochloric acid is found in the gastric juice, should be questioned very seriously. In my own personal experience every patient with anemia and free hydrochloric acid in the gastric juice has turned out to be some other disease than pernicious anemia. At the Peter Bent Brigham Hospital of 105 patients with anemia and a subsequent

course justifying the diagnosis of pernicious anemia, 104 showed no free hydrochloric acid in the gastric juice. The one patient of this group with free hydrochloric acid died and at autopsy nothing was found to change the diagnosis of pernicious anemia. So far as we could find out, there was no error in the determination of free hydrochloric acid and the specimens of gastric juice were not mislabeled. However, error cannot be absolutely excluded and there is a possibility that the patient received hydrochloric acid as a medicament prior to the gastric analysis. All would agree I am sure that absent free hydrochloric acid is an almost constant finding in pernicious anemia. Furthermore, there are a number of observations of the finding of absent free hydrochloric acid on gastric analysis prior to any suggestion in the history of the existence of anemia and at a time when the blood was normal. I myself know of two such patients in whom the absence of free hydrochloric acid was found five years before anemia developed. Finally the condition does not change during remissions in the anemia for in the cases we have studied the absent free hydrochloric persists after the anemia practically disappears in a remission. All of this makes it improbable that anemia as such could be a cause of absence of gastric free hydrochloric acid. This doubt is enhanced, too, by the frequent finding of free hydrochloric acid in patients with severe anemia of other types.

Gastric symptoms of one sort of another are among the very frequent complaints of pernicious anemia patients and these may antedate the evidences of anemia. Some of these symptoms probably are associated with the deficient acidity of the gastric juice and with the

*Read before the New York Academy of Medicine, January 20th, 1925.

evidences of atrophic changes in the mucous membrane of the gastro-intestinal tract and are but remotely, to say the least, associated with the anemia. Some types of gastro-intestinal symptoms may be caused by the anemia, as they greatly improve or entirely disappear during periods of remission.

With these gastro-intestinal disturbances already noted a periodic sore tongue is described by the patient and many who have pernicious anemia show a tongue smoothed as a result of atrophy of the papillae. Such an atrophic change or evidences of inflammation we found in 65 per cent of a series of our cases, while in only 16 per cent, was the tongue described as being entirely normal in appearance. It is very difficult to correlate these symptoms of sore tongue and atrophy of its mucous membrane with the anemia in the sense of the anemia causing them.

The recurring soreness and other changes in the tongue in pernicious anemia is strikingly suggestive of what is commonly found in sprue even when anemia is little marked. Those familiar with sprue often refer to changes in the blood during the course of the sprue suggestive of pernicious anemia. Other resemblances exist between certain cases of these two diseases. An only infrequent observation of sprue had aroused in my mind, as has happened with other clinicians having a wider experience with sprue, the feeling that there must be some close relationship of sprue to the pernicious anemia of the type so frequently seen in the wards of Boston hospitals, and for a number of years I have frequently commented on this to my students and house-officers. E. J. Wood recently (*Am. Jour. Med. Sc.*, 1925, CLXIX, 28) has reported the almost constant finding of monilia psilosis in pernicious anemia patients in North Carolina and brought important evidence forward indicating the practical identity of these two diseases, observations which may prove to be of very great significance. This similarity to sprue and the finding of monilia psilosis is further

suggestive that the gastro-intestinal disturbances of pernicious anemia are not directly related in a causal sense to the anemia itself but that both have some cause in common.

Another frequent type of symptom in pernicious anemia are the sensory changes represented by numbness, tingling, etc., in the fingers and toes. With these often go disturbed reflexes and in a few cases difficulty in walking, either spastic or tabetic in type. The central nervous system shows areas of sclerosis in the cord and higher tracts as explanatory of these symptoms. There again the central nervous system disturbances may antedate evidences of anemia, persist during remissions or dominate the clinical picture when anemia is so slight and blood changes so little marked as to make it doubtful whether one is dealing with a pernicious anemia or not. Moreover, patients with this type of lesion in the central nervous system even without anemia have no free hydrochloric acid in the gastric juice.

These various symptoms and findings, just described, are not pathognomonic of pernicious anemia for they may be found in patients who show no suggestion of pernicious anemia and persist so long as the patient lives without signs of pernicious anemia developing. If they do not result from the anemia, they must result from something else, possibly from the unknown factor that causes pernicious anemia. Some, at least, of them occur with far too great frequency in pernicious anemia to be a mere coincident disturbance.

If one is going to look on the symptomatology of pernicious anemia as, in the main, the result of the anemia, how is he to harmonize the very striking similarity between the symptomatology of two diseases apparently so different as pernicious anemia and polycythemia vera? In the one there are too few red blood cells, in the other too many, and yet glance for a minute on this parallel column arrangement of the descriptive terms of two authors in articles prepared at the same time for the same system of medicine.

SYMPTOMATOLOGY.

Polycythemia.

General weakness.
Lassitude.
Loss of weight.
Shortness of breath on exertion.
Ease of fatigue.
Somnolence.
Paraesthesias.
Pain in legs (may occur).
Loss of appetite.
Sense of fulness in stomach.
Vomiting.
Constipation.

Blurring of vision.
Specks before eyes.
Irritability.
Depression.
Poor memory.

Pernicious Anemia.

General weakness.
Muscular weakness.
Considerable loss of weight in 40%.
Dyspnea.
Abnormal fatigue.
Somnolence.
Paraesthesias.
Pain in legs (rather rare).
Loss of appetite.
Sense of fulness in stomach.
Vomiting.
Constipation alone or alternating with diarrhoea.
Defects of sight are fairly common.

Any form of psychic alteration from the mildest types to the most intense.

Leaving off the headings one would think these the descriptive terms of identical conditions, but they most assuredly are not. Yet, if you will analyze your own case histories of pernicious anemia and polycythemia vera you will find in each but a reiteration of the same complaints even though the patients do look so entirely different. And even this is not always true for a fair proportion of polycythemic patients have normal or even at times pale cutaneous surfaces, while a pernicious anemia patient may show pink cheeks. To increase the doubt of essential important difference between polycythemia and pernicious anemia, suggested by this striking identity of much of the symptomatology, one can refer to those reported cases of polycythemia vera which have progressed into the clinical and blood picture of pernicious anemia as if they were but stages in the same process. This might even be productive of the thought that in both conditions there was operative an unknown injurious substance, in the one case acting to cause proliferative changes in the bone marrow with resultant polycythemia, and in the other degenerative changes in the bone marrow with resultant anemia. This is exactly what does happen in the various ranges of reaction to injurious substances that we term inflammation or

inflammatory response, whether the injurious agent is physical, chemical or bacterial in nature. Perhaps more often than we now think in pernicious anemia there is an antecedent stage of polycythemia. That polycythemia may exist without symptoms is known, for it has been observed without symptoms in relatives of a polycythemic patient with symptoms.

Absent free hydrochloric acid nearly always is found in pernicious anemia and often it is observed to antedate the development of anemia. It does not seem to be a general finding in polycythemia. Unfortunately in my own cases of polycythemia there are but four with gastric analyses and these showed normal amounts of free hydrochloric in three and a small amount in one. Dr. Minot tells me of a patient of his, formerly under observation at the Peter Bent Brigham Hospital, who now looks pale, has 8,000,000 red cells and 90 per cent. hemoglobin with a red shiny tongue that is often sore, and has no free hydrochloric acid in the gastric juice. Seven and a half years ago she gave to us a history of occasional canker sores on the tongue and her tongue appeared abnormally red and distinctly smoother than normal. At this time she had a red cell count of 7,600,000 and a hemoglobin of 125 per cent. Perhaps this

patient now is on the road to a condition of pernicious anemia.

From the above it seems obvious that much of the symptomatology of pernicious anemia is but remotely related to the reduced number of red blood cells, i. e., to the anemia as such. Furthermore, it is often noted that patients with pernicious anemia with a red cell count ranging from two to two and a half million lack many of the evidences of deficient blood that are found in patients with similar levels of red cell count from secondary anemia. This suggests that the red cells of the pernicious anemia patient with their relatively rich content in hemoglobin function much more efficiently than does the corresponding number of red cells of the patient with secondary anemia. This further emphasizes the importance of

factors other than the actual anemia in the production of the symptoms and abnormal findings in patients with pernicious anemia. The other factors consequently become the most important ones in the diagnosis of the disease while the anemia is relatively unimportant.

Conclusions.

It would seem as if anemia *per se* causes symptoms in pernicious anemia only when the blood counts fall to very low levels; in other words, only in end stages or when, between remissions, the blood count and hemoglobin are very low. Contrariwise it seems as if a very large proportion of the symptoms and findings in pernicious anemia must result from a cause other than the actual anemia.

A Consideration of the Theory of Focal Infection*

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Whatever may be one's individual views of the doctrine of focal infection or one's individual experience with its practical application in the actual practice of medicine, it is certain that no theory propounded in recent years has had a more profound effect on the medical fortunes of an ailing public. Indeed it seems that the laity itself has seized on the doctrine with even more avidity than the medical profession and has submitted itself to procedures derived from this doctrine, and even demanded them, with no less unreasoning faith than it has shown in subjecting itself to the rampant systems of quackery in medicine. This in itself is scarcely remarkable. The instinctive hope of emancipation from a tenacious chronic ailment, or of future immunity against a recurrent one, is dominant in every sufferer. The loss of a few teeth or a pair of ton-

sils is a small price to pay for such a stake.

The doctrine of focal infection has appealed to men of science as well as to those whose opinions are founded on evidence less scrupulously weighed than is required to bring conviction to the scientific mind. Each year witnesses an increase in the output of literature bearing on this subject. In surveying this literature one is struck by the fact that by far the greater part of it is to be found published in journals whose columns are open to the opinionated and empirical observer. Few articles are to be found coming from leaders of medical thought. One may deduce from this fact nothing more than that critical minds are reluctant to voice views and opinions concerning a matter which is so chaotic.

Focal infection is defined by Frank Billings as "a systemic or local disease due to infectious micro-organisms carried in the blood or lymph stream from

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a focus of infection." The doctrine rests therefore on the fundamental assumption that there exists at some point in the body a localized area in which bacteria of initial or acquired pathogenic powers have colonized themselves successfully and have acquired such a resistance to the normal defensive mechanism of the body as to withstand extermination, and that from this point either periodic or constant invasion of tissues more or less remote from the original focus occurs.

The application of this principle to actual clinical medicine offers indeed an alluring prospect. Brief years of experience have already shown that it is fraught with many difficulties. If we endeavor sedulously to avoid the mire of dogmatism we may venture to touch on certain general phases of the subject. Sources from which conclusions may be drawn are: (1) Individual experience; (2) The experience of others; (3) Experimental work; (4) Deductions from previously established principles. These sources are obviously not arranged in order of their importance. The scope of individual experience is too limited for safe judgment. The aggregate experiences of others could we but obtain them in unbiased form should be a safer guide. Experimental work is safe only when agreement exists among the experimenters. Previously established principles may not meet the needs of a new situation. Fortunately for us and for the race the entire responsibility does not rest on the medical profession. Another court of appraisal is constantly and silently at work, inattentive and largely indifferent to the theory but judging its utility from a pragmatic angle and in the long run arriving at conclusions which determine the overthrow or perpetuation of the practice if not of the theory. This court is the mass judgment of the public. The survival of any theory or practice in therapeutics is going to be finally determined by those whom it subjectively affects.

Of the four sources of information outlined above we shall concern ourselves in this paper only with previous-

ly established principles and such deductions as seem warranted.

Assuming the existence of a focus of colonized pathogenic bacteria it is important to consider in what ways such a focal infection can bring about remote tissue injury. Two conceptions are possible and both seem current. First, actual metastasis of living bacteria through blood or lymph channels to a point or points where secondary colonization occurs. Second, without actual migration of bacteria, toxic products may be disseminated from the primary focus and produce manifestations of disease in remote tissues. A combination of these two factors may exist. It is surprising that current expressions indicate that the toxemia theory is the popular one. The point is of great importance as therapeutic results are inextricably bound up with it. If only toxins are disseminated we should be able to assume that the eradication of the primary bacterial focus would promptly terminate the toxemia and that thereafter natural processes of tissue repair would quickly bring about recovery. If on the other hand bacterial migration occurs the problem is unquestionably vastly different.

There are strong circumstantial evidences against the view that secondary localized manifestations, especially unilateral ones, of focal infection are due to the effects of toxins. The general phenomena of infection, which we speak of as symmetrical manifestations, namely, fever, asthenia, malnutrition, loss of weight, anaemia, etc., may be regarded as toxic or not without affecting our conception of the nature of secondary localized lesions. We may recall that the bacteria concerned in focal infection are practically without exception those of the endo-toxic group, which produce no diffusible toxins *in vitro*, and from which no toxic products can be obtained except after the disintegration of the dead bacterial cells. It is striking that in the two types of infection in which we know that soluble toxins of high potential are produced by the bacteria, viz., tetanus and diphtheria, that here

the manifestations of toxemia are general and symmetrical. While in diphtheria unilateral nerve paralysis may occur it is assumed on very good evidence that the toxins pass in this case not by blood or lymph routes but along the course of the nerve sheath.

Presumably in the body toxic derivatives may be released by lysis of the bacterial cells, and thus the systemic manifestations of any infection as opposed to the unilateral and localized ones may be essentially toxic in nature. Vaughan has endeavored to establish the conception of a non-specific protein poisoning to explain the general manifestations of bacterial toxemia. His assumption is that the toxic substance is a result of cleavage of bacterial protein, and that this toxic fraction is not specific for the type of bacteria from which derived. This theory, I think, has not obtained a wide-spread acceptance; nor, on the other hand, has it been shown to be false.

When we attempt to apply the toxemia theory in explanation of localized tissue damage, the principle of chemotropism is immediately involved. This principle is a fact and not a theory. It is established in pharmacology as well as in toxicology. It gives an adequate explanation for the observed specific affinity between a particular chemical substance and tissues of specialized type. Through this affinity tissues of specialized type, such as nerve, renal or hepatic parenchymatous tissues may be damaged far in excess of that which accrues to other tissues. A great deal of violence is done to this principle of chemotropism when the effect of blood-borne toxins is invoked to explain a strictly unilateral lesion, the corresponding structure or structures on the opposite side of the body remaining unaffected. Unless traumatized or otherwise previously damaged, on what principle may we assume that a given nerve, muscle or joint structure on one side of the body should filter out from the blood stream its contained toxins, while similar tissues on the opposite side of the body remain totally unscathed? This is not to cast

any doubt on the fact that a focus of infection may be so located on one side of the body as to set up a predominantly regional secondary damage, where its toxins may be disseminated by adjacent nerve routes. Even this however is not commonly observed. The manifestations of tetanus are rarely if ever unilateral, though the toxin ascends to the central nervous system by a strictly unilateral route.

Again it should be recalled that the pathological effects of toxins are typically degenerative and not inflammatory. A massive dose of toxin locally administered may bring about a round cell infiltration with exudation, hemorrhage or necrosis, but this is not the pathology of tissue damage resulting from toxins disseminated in dilute form by the blood stream in non-lethal infections, whether they be exotoxins or endotoxins. The pathology of toxic influence as commonly observed is cloudy swelling, fatty degeneration, hyaline or amyloid degeneration, primary atrophy. Speaking broadly then, the gross and microscopic evidences of inflammatory reaction to bacterial invasion are very different from the degenerative changes which we have long been taught to ascribe to the influence of chemical toxins. We have had for years general principles for their differentiation in clinical medicine. Even though it be true that the pathology of infections shows most often combined degenerative and inflammatory changes, yet even clinically as well as microscopically the predominance of one or the other factor may usually be determined without great difficulty.

In view of these considerations therefore it would seem a serious misconception to attribute the secondary localized unilateral manifestations of focal infection to the action of toxins. The phrases one hears so frequently of "absorption of pus," and "absorption of toxins" would indicate that this conception is very common and widespread. Superficially the distinction may appear unimportant. Actually it penetrates deeply into our principles of

therapeutics. It need scarcely be said that the foundation for many a disappointment on the part of our patients has been laid by such glib phrases.

Frank Billings in Oxford Medicine has this to say on the subject: "It has been assumed that the systemic disturbance which may occur from a focus invaded by endotoxic pathogenic bacteria is due to intoxication. In this connection it has been suggested that the toxic material of the endotoxic bacterial invader is released in the focus by autolysis of the dead micro-organisms. It has also been suggested that toxic substances are elaborated in the focus of infection by a biochemical reaction excited by the presence of the micro-organisms in the tissue involved in the focus. This hypothesis may contain an element of truth, but it is more probable that the damage to systemic tissues is caused by the pathogenic micro-organisms of the focus of infection carried in the blood and lymph channels to and lodging in distant tissues."

Proceeding from this point and with the view that the secondary localized manifestations of focal infection are with few exceptions the result of actual bacterial metastasis to that point and not the result of toxins, it becomes evident that the eradication of focal infection by the removal of the primary focus is greatly complicated. The diagnosis of focal infection is quite commonly made only after secondary invasion has occurred, and it must be admitted that each successful implantation of bacteria in remote tissues means a second focus of infection with perhaps the same potentialities for further colonization and other remote damage as the first one. Now and then, one hears astonishing reports of cures over night following the removal of a primary focus of infection. The writer has never seen such a sequence of events in which coincidence could be certainly excluded. Bacteria colonized in a lymph gland or periarticular tissues can scarcely be affected by the removal of a tooth, even though that tooth be the primary focus. No one claims that the removal of a

tubercular tonsil exerts any influence on tuberculosis of the bronchial lymph nodes or lungs, even though that tonsil be the point of primary invasion. Treatment of the primary lesion of syphilis does not influence the course of the infection when the treponema has passed to other tissues. We have long since abandoned the idea that the course of typhoid fever is influenced to any degree by the prompt healing of the primary lesion in the ileum. Instances of this character could be multiplied. How can we assume conditions to be different in the case of focal infection, with streptococci for instance? The extermination of bacteria which have passed the primary portals of infection must await the processes of phagocytosis and immune reactions both local and general.

The list of bacteria concerned in the production of focal infection is a long one, including even the treponema pallidum and the endameba buccalis (Billings). There appears no reason why the list should not include every pathogenic organism which enters at a focal point. In actual practice, the problem of unearthing a primary focus of infection often reduces itself to a search for a local point of suppuration either confined or discharging. Such a focus, when found, is attacked with great enthusiasm on the supposition that the underlying cause has at last been found, that absorption of pus and toxins will be checked, and the patient's remote complaints relieved. To be sure, suppurating foci should be removed. Time often shows, however, that the ultimate results have not justified our zeal. In attempting to uncover the point of origin of a remote inflammatory lesion, which is distinctly non-suppurative in type, it seems highly probable that a focus of infection presumably primary, if itself frankly suppurative in character, is probably not the source from which the secondary focus arose, especially if the anatomical relationships and channels of lymphatic communication are not such as would be looked for in the metastasis of neoplastic disease.

While identification of the point of origin of any secondary point of inflammation can be positively established only by recovery of the same kind of organism from both lesions, such proof can rarely be obtained in practice. In the absence of such convincing proof, it seems reasonable that considerable stress may justly be laid on the type and characteristics of the inflammatory reaction observed at the supposed primary and secondary lesions. Of course, this principle can be applied only in a broad way, since the inflammatory reaction set up by the same pathogenic agent must necessarily vary within certain limits, depending upon the type of tissue involved and the intensity of the infection. However, if not carried to extremes, the principle is a sound one and I am under the impression that it is widely applied in experimental medicine. To be specific, I should venture the assertion that a primary focus frankly suppurative in character is not the point of origin from which arise such distinctly non-suppurative lesions as are observed in acute inflammatory rheumatism, and, the reverse, that a streptococcus viridans focus at the apex of a tooth is not the point of origin of a single or multiple suppurative infection elsewhere.

Local infections of definitely suppurative character are extremely common inflammatory ailments. It is significant that, while many patients with obscure ailments in whom there is reason to suppose the existence of an occult focal infection, are daily searched and, often vainly, by internists and expert specialists for evidence of such localized infection to which the secondary condition might be attributed, that it is a somewhat rare incident for those engaged in treating the many chronic inflammatory and purulent infections of sinuses, teeth, etc., to observe the development of remote secondary infection. If, looking backward, we may refer a neuro-retinitis of non-suppurative pathology to an antecedent purulent inflammation of an antrum, then such a neuro-retinitis would be a reasonable complication or sequel to be anticipated in the

many neglected cases of sinusitis which finally come to treatment. How often the later sequence is to be noted cannot be stated. If it is not occasionally observed under such circumstances that the sequence of cause and effect appears unmistakable, we may go no further than to draw the tentative conclusion that suppurative foci rarely induce remote non-suppurative lesions.

If this be even relatively true, and if the most important agents of focal infection be the streptococcus group, hemolyticus, viridans, mucosus, capsulatus, etc., as Rosenow's work, however criticized, would lead us to suppose, and if streptococci of virulent type may colonize themselves without producing obvious signs of local inflammation, the problem of focal infection then becomes almost unsolvable. How shall we locate primary foci, how eradicate them? Let one read Billing's list of the sites of primary foci of infection as given in Oxford Medicine, Vol. I. He omits no tissue covered by mucous membrane. This being the case, the utter hopelessness of eradicating all tissues at which a hemolytic streptococcus may colonize itself for later invasion, is evident. A thorough-going adherence to the theory and practice of removal of all primary foci would lead us to remove the gall bladder and appendix of every patient who has evidence of focal infection persisting after removal of more readily accessible suspicious foci. There are obviously practical, if not theoretical, limits beyond which we do not go in the practice of removal of supposed primary foci. Our recognition of these limits and our often half-hearted measures eloquently demonstrate an element of skepticism.

We are told by one authority (Billings, Loc. Cit.) that the gall bladder, appendix and intestine are sites of primary foci of infection. We are told by another (Evans, of the University of Wisconsin) that inflammation of these organs, i. e., gall bladder, appendix and colon, results from hematogenous invasion from sinuses, tonsils, etc. Where are we going to find terra firma in such

a state of disagreement? Much of the experimental work of Rosenow has been denied by other workers. His theory of transmutation of bacteria is not accepted. His demonstrations of elective tissue affinity have been confirmed only within certain bounds. Obviously in the clinical reports found in the literature, there is a vast deal of overenthusiasm. We may refer to Cotton of the New Jersey State Hospital for the Insane as one who has carried the theory of focal infection in actual practice to its ultimate limits, and yet there are few who believe that this apostle of the theory is walking in the pathway of medical science.

One fact stands out clear and unmistakable in all this uncertainty. This fact is sufficient to prove that the theory of focal infection is not a myth. Any infection of a tissue of the body not directly accessible to bacteria from the skin or mucous membrane and which has not arrived there by direct extension, must have been brought by the blood or lymph currents from elsewhere, and that point from which it has come will correspond to the definition of a focus of infection. It does not prove the further assumption that bacteria found in a supposed primary focus and recovered by culture are permanently colonized there. It does not prove that a pathogen recovered from a mucosal surface or sub-mucosal tissue is the responsible agent for a deep infection whose infecting agent cannot be identified. It does not give us, moreover, the assurance of which we stand in need, that once metastasis has taken place the removal of the primary focus will terminate the infection. There is no principle with which I am familiar on which we may base the belief that the removal of the primary focus will result in stimulation of the processes of focal tissue immunity. We may only assume that the removal of the primary focus will bring to an end further metastasis from that point of primary infection. These things afford an explanation for the singularly unsatisfactory results which we often observe in sequence to the measures we

have pursued in cases of focal infection. The inference must not be drawn that in directing attention to these things, we mean to imply that efforts to detect primary foci and to remove them should be abandoned. It is, however, necessary that we should have clear-cut conceptions of what is being accomplished by any therapeutic procedure which we may choose to carry out.

The future, with its harvests of research and painstaking and exact clinical and laboratory methods, alone can bring us the wisdom, of which we stand in urgent need, for the scientific application of the principle of focal infection to the daily and routine practice of medicine. In the meantime we may draw the following conclusions:

1. The theory of absorption of toxins from a focus of infection does not satisfactorily explain the production of secondary localized, unilateral lesions.

2. Frankly suppurative foci of infection are probably not the points of origin of the majority of non-suppurative secondary foci.

3. The removal of a primary focus after metastasis has taken place is a reasonable procedure, but is to be regarded as a measure of prophylaxis and cannot be expected a priori to influence existing remote points of colonization.

4. It is practically impossible to follow to its logical end, the principle of removal of all primary foci.

5. No decisive standards are, at present, available for determination of the primary focus of infection. Bacterial identity is most reliable; similarity of pathology is of great importance; regional communication by known lymphatic routes must be considered.

6. Natural processes of general and local tissue immunity must be relied on for the eradication of most secondary and metastatic lesions.

7. So long as procedures carried out in the effort to eradicate focal infection are necessarily of an empirical nature, a reasonable conservatism is better for the patient and for medical progress than sweeping radicalism.

Two Cases of Hair Ball of the Gastro-Intestinal Tract

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In 1232, according to report, one Master Neis was rewarded by Alexander II of Scotland for "cutting a hair ball from his royal master's heart." For the sake of Master Neis' reputation for veracity it is to be hoped that the description of the operation was made by some contemporary news gatherer, fore-runner of our modern Sunday supplement writer; for it seems scarcely probable that recovery would have occurred after an operation involving intracardiac exploration with the technic in vogue at that early date. Aside from the question of the location of the mass, it is improbably that Alexander was suffering from a true hair ball, because of his age and sex and the improbability of any surgeon of that day attempting an abdominal operation. The first authentic instance of the occurrence of a hair ball of the alimentary canal was described by Baudamant in 1776; the first operation for the relief of this condition was performed over a hundred years later by Schoenborn. In the most recent comprehensive review of the literature, Davies was able to collect the reports of 106 cases of gastro-intestinal hair ball, including both those discovered at autopsy and those encountered at operation; to this number, he added two more operative cases coming under his personal observation. In 1915, Matas collected 76 cases from the literature and reported one occurring in practice; of this number, 47 were operated upon. Since the appearance of Davies' paper, three additional cases have been reported; one by Brown; one by Monrad; and one by Lyon. In the late 90's Dr. George Ben Johnston successfully removed a large hair cast from the stomach of a young woman; this unreported case, together with the two that have recently come under my observation increases the total number of recorded instances of gastro-intestinal hair ball to 114. Assuming that all of the additional cases collected by Davies

were operated upon, the total number of such cases on record in his paper is only 78; five of the six cases not included in his summary were subjected to operation; these increasing the total number of operative cases to only 83, if the above-mentioned assumption is correct.

The fact that the hair ball is almost always made up of the patient's own hair indicates that it is produced by the habit of hair eating. The explanation for this peculiar habit is difficult to find; while it is well known that insane persons frequently ingest foreign bodies of varied sorts, true hair casts are uncommon in this class of patients; conversely, the sufferers from hair ball seldom present any evidences of mental abnormality. In certain of the reported cases of gastro-intestinal hair ball, in addition to the practice of hair eating, other habits, clearly indicative of a nervous instability were observed. This was strikingly true in Monrad's patient, where the child, after her own hair was closely clipped, resorted to eating that of one of her dolls; deprived of this, she indulged in a diet of toe nails. Brown's patient "would greedily devour portions of any rug, mat, or woolen garment"; and Lyons' patient was seen to pick the wool from a blanket and swallow it. Heazlitt mentions an instance occurring in a 16 year old girl who showed definite indications of hysteria. In the great majority of cases of hair ball, however, the patients seem perfectly normal and as free from nervous instability as from mental derangements. The fact, so frequently commented upon by writers on this subject, that hair balls occur almost exclusively in females, has led Butterworth to suggest that hair eating arises from the practice of young girls wearing the hair long and loose, with its ends easily accessible to the mouth; so that Matas thinks that: "Biting hair and swallowing it is analogous to the

habit of biting the finger nails which is common to both sexes in early childhood and adolescence; the hair eating preponderating in women solely because of the greater opportunity and temptation offered by the long hair of the girl."

Where some comparatively large and firm substance is present in the stomach to act as a nucleus or core for the hair ball, it is comprehensible how the latter may be produced; in the absence of such a nucleus, however, it is not clear why the hair should accumulate in masses and not pass through the alimentary canal. It has been suggested that the "hairs became entangled with the mucous folds of the stomach"; such a statement is not very definite in explaining the mechanisms of the production of the mass. However, the complicated knotting which the duodenal tube may be subjected to by peristalsis indicates clearly that we are not yet fully cognizant of the nature of the gastro-intestinal movements.

As has already been mentioned, the hair ball is generally made up chiefly or exclusively of the patient's own hair; in only two instances has it been found to consist of hair from a foreign source. In one of these patients, a woman spinner of cow's hair, the practice of moistening her fingers in her mouth, led to the ingestion of enough of the cow's hair to form a mass in the stomach. The second instance occurred in a female brush maker, who swallowed enough of the bristles used in the manufacture of the brushes to produce a hair ball of the stomach. Especially in the insane or the neurotic patients, the hair may be mixed with thread, string, vegetable fiber, and such foreign bodies as nails, screws, wire, etc.

The most frequent site for the occurrence of the hair ball is the stomach; up to the time of the appearance of Matas' paper, only six cases had come to operation for hair ball of the intestine; one case is on record where the mass was situated in the esophagus, with a prolongation into the stomach. The size of the hair ball may vary widely; the smallest reported weighed only

2¼ ozs.; the largest 6½ pounds. When encountered in the stomach, the mass is usually single; instances have been reported where several have been present; with nicely faceted surfaces. As emphasized by Heazlitt, of especial importance is the possibility of accumulations occurring both in the stomach and the intestine. In the case which he reported, a hair cast of the stomach was removed; but the patient subsequently developed symptoms of obstruction which were found to be due to the presence of a second mass of hair in the ileum. Scott-Turner operated upon a woman of 29 because of intestinal obstruction; a hair-ball was removed from the ileum; four weeks later, it was necessary to operate because of pyloric obstruction; gastrotomy revealed a gastric hair ball, occluding the pyloric orifice. In the remarkable case of Bell, multiple casts of the stomach and intestine necessitated 11 operations before the patient was "on the high road to recovery."

As regards symptomatology of the cases coming to operation three types may be distinguished. The first occurs in those instances where the hair ball is situated in the stomach; and, although the mass may be of enormous size, completely filling the interior of the viscus, digestive disturbances or other symptoms referable to the gastro-intestinal tract may be slight or entirely absent. The patients in this class seek operation because of the discovery of a tumor. It is indeed remarkable how free they are from discomfort and how little the powers of digestion are impaired, as evidenced by the excellent state of nutrition, although there is present in the stomach an enormous mass, which would seem capable of completely preventing this organ performing its normal functions.

The second type of patient also has the hair ball situated in the stomach. There may be quite marked chronic disturbances; dull, persistent abdominal pain, with acute exacerbations; capricious appetite; anemia and loss of weight and strength are commonly encountered in them. Operation may be

undertaken because of the more or less indefinite symptoms referable to the gastro-intestinal tract; the discovery of the tumor; or the development into the third type.

The third type is seen chiefly in the patients where the hair ball is situated in the intestine, though this is not invariably so. In these cases, an acute surgical emergency arises, generally because of obstruction, though it may be due to ulceration or actual perforation of the wall of the stomach or intestine; in the second of my own cases, the history indicated that obstruction first occurred and was followed by perforation. In marked contrast to the condition encountered in the patients of the first type, the ones in this class are seriously sick and the prognosis is doubtful; of the seven operative cases where the hair mass was in the intestine, death occurred in three instances.

Of the 47 operative cases mentioned in Matas' paper, the correct pre-operative diagnosis was made in only ten instances. In many of the cases, simple exploratory laparotomy was performed in the absence of the ability of the observers to make a positive pre-operative diagnosis; in others, it was suspected that there was a tumor of the spleen; a floating kidney; tuberculous peritonitis; malignant disease of the stomach, or even pregnancy. The failure to make a correct diagnosis before operation is generally not due to any inherent difficulty in the way; it arises because of the comparative rarity of hair ball leading to the surgeon neglecting to take it into consideration in arriving at his conclusions. Even in the absence of radiologic examination, it is frequently possible to obtain fairly definite information regarding the presence of a hair ball when it is located in the stomach; when present in the intestine, the differential diagnosis is much more difficult.

The history is comparatively valueless. So far as I have been able to ascertain, the information that the patient was a hair-eater has never been volunteered in any of the reported cases; even when the direct question is asked,

it is generally impossible to get an admission from the patient; though, in the case of children, the parents may have noticed the practice. With a history of little or no digestive disturbance in a young individual with a large abdominal tumor, the possibility of hair ball should always be considered; obviously, much more information must be secured before a reasonable degree of certainty can be felt.

On inspection, the patient's hair may be found to be scanty; occasionally, bald spots are present. Such appearances are not invariably seen, however; the practice of hair eating may have been discontinued years before the discovery of the tumor and the damage arising from this practice may have been fully repaired. The more or less marked anemia and loss of flesh which may be observed in the more severe cases present nothing characteristic.

On examination, a tumor is generally palpable. Depending on the portion of the alimentary canal in which the mass is present, the location of this tumor varies. When the hair ball is in the stomach, the more usual location for the tumor is the upper abdomen; where gastropexia has occurred, it may be much lower; in Davies' case, it was palpated in the right lumbar region. The shape of the tumor has been variously described J-shaped, crescentic, oval, etc., this depending on the stage of its development and the strength of the gastric walls. As a rule, the tumor is smooth, hard and non-tender. A point of much importance is the ease in which the stomach may be moved and the readiness with which the tumor may be displaced within the stomach in those cases where it does not actually fill this viscus; it was largely this feature which enabled Stelzner to make the first correct pre-operative diagnosis in 1885. While the tumor is not tender in the uncomplicated cases, after ulceration or perforation has taken place, decided tenderness may be present, as illustrated by the second case coming under my observation.

From the laboratory examinations,

information may be obtained through the detection of hair in the gastric contents or in the stools. Hausmann has stated that fatty acid crystals and plates in the gastric contents may be observed; this finding can scarcely be considered as even very suggestive.

By far the most important procedure to be taken in arriving at a correct diagnosis is the radiologic examination; indeed, it has been recently said that with the x-ray, the diagnosis of hair ball of the gastro-intestinal tract should now become the rule, rather than the exception. Unfortunately, it is generally necessary that the suspicion of the nature of the tumor mass be present before the necessary radiologic examination is ordered; in many cases, one hesitates to subject a patient to the expense and inconvenience of a tedious radiologic examination of the alimentary tract when it may be felt that the condition is a tumor of the kidney or spleen, for example.

Though descriptions of the x-ray appearances in patients suffering from hair ball were published as early as 1911 by German observers, the most comprehensive consideration of this subject has been made by Holland and by Ramsbottom and Barclay. In accord with previous statement, these authors maintain that the simple roentgenologic examination is comparatively valueless; it is usually impossible to secure sufficient contrast to determine the existence of an intra-gastric mass. On the other hand, the employment of the contrast meal will generally give the most valuable information. In Holland's plates, it is shown beautifully how the opaque meal is at first held up at the cardiac end of the stomach, forming a cap to a lighter mass which is seen to fill the interior of the organ. Gradually, the bismuth spreads around the periphery of the hair cast, clearly outlining it from the gastric walls. Ramsbottom and Barclay emphasize the importance of "radioscopic palpation"; while observing the stomach with the fluoroscope, the hair mass is displaced upward into the air space at the fundic

end of the stomach; the portion shoved upward into this space is coated with the bismuth and is clearly marked out. Such appearances as these, in conjunction with the information obtained by physical examination, should render the diagnosis of gastric hair ball reasonably certain.

Obviously, the nature of the operative measures depends on the location of the hair mass; when it is present in the stomach, a gastrotomy is indicated. Of the 47 cases in Matas' summary, gastrotomy was performed in 38 instances without a single death; since then, one fatality has been reported following such an operation. The hair ball is generally a foul and putrid mass; caution must be observed in order to prevent contamination of the peritoneum; this being rendered more difficult because of the impossibility in many cases of delivering the enormously distended stomach with the object of extraperitonealizing it, as commented upon by Matas. As in gastrotomy for other purposes, the incision in the organ is to be made midway between the lesser and greater curvature, in order to avoid injury to blood supply as much as possible. Unfortunately, the large size of some of the balls necessitates very long incisions in the gastric wall.

As has already been mentioned, the mortality in the operative cases where the mass was in the intestines is high; of the six cases discussed by Matas, death occurred in two. Where the operation is undertaken relatively early, before serious local damage has been done to the intestinal wall, simple enterotomy may suffice; in other cases, notably Bell's extensive resections have been necessary.

During the past year within a period of six weeks it has been my fortune to encounter two cases of hair ball of the gastrointestinal tract; besides the infrequency of two cases occurring in the practice of any one man in this short period of time, they are interesting because they represent two distinct types. In the first of these patients, the mass was in the stomach, and, as is frequent-

ly the case, the symptoms were exceedingly slight; in the second, the hair ball was in the small intestine at the ileocecal valve and when the patient was operated upon, her conditions was serious, death resulting shortly afterward.

The first patient was a young married woman of 26. Her only complaint was of a symptomless tumor of the upper abdomen.

The general physical appearance was that of a well nourished young woman. All examinations were negative with the exception of the abdomen. Examination of the abdomen showed a large "J" shaped mass lying across the epigastrium beginning under the left costal arch. It was impossible to get the palpating hand between the left costal arch and upper limits of this mass, which was smooth and rounded along its lower border. It was not tend but firm to the touch; the lower portion was freely movable, but above the mass seemed to be attached under the left costal arch. On percussion there was a tympanitic note over the upper part of the tumor. Occasionally in palpation gas could be felt to pass between the tumor and abdominal wall.

Diagnosis: Retro-peritoneal tumor.

Operation was advised and consented to. Through a left rectus incision the mass was exposed. On inspection it looked as though it was a retro-peritoneal growth, but in lifting up the transverse colon to get behind the stomach it was apparent that the growth was within the stomach. Before opening the stomach and in palpating the mass it gave one the impression of a hair mattress. It was then suggested that we were dealing with a hair-ball and the patient's scalp was closely examined to see if bald spots could be made out. The anesthetist reported there were none. The stomach was opened at the cardiac end and at once the nature of the growth was apparent. The field of operation was carefully packed off and the tumor delivered through this opening in the stomach. The tumor on removal weighed 16 ounces and was a perfect

cast of the stomach. The patient made an uneventful recovery.



The second case occurred in a factory girl, aged 15 years.

Four days before admission she was seized with severe pain around umbilicus, became nauseated and vomited. She had no temperature, but pain and vomiting continued at intervals. On admission pain was present in right lower quadrant and around umbilicus.

Abdominal Exam.: There was some rigidity, and marked tenderness over lower right quadrant. A mass could be palpated at McBurney's point (a provisional diagnosis of appendiceal abscess was made).

Leucocytes on admission were 11,600. Urine—pus two plus. December 3rd. Leucocytes 18,000. Urinalysis—blood two plus. December 5th, Leucocytes, 19,400. Patient felt better, declined operation and left hospital.

Patient was re-admitted to hospital two days later, complaining of pain in lower right quadrant. Temperature 100.4, plus 100, leucocytes 21,200, many pus cells in urine. X-ray examination of kidneys negative.

Phys. Exam.: A tender mass about the size of the fist could be made out, the lower border of which corresponded to the upper limit of McBurney's point.

Diagnosis: High retrocecal abscess.

Under gas-ether anesthesia a small flank incision was made. The posterior aspect of the cecum could be made out and the mass was apparently in front.



No effort was made to rupture it. A front incision was then made over the mass. When the peritoneum was reached it was found fixed to the mass. This was opened and a small quantity of foul puss exuded. In this abscess cavity could be seen a small amount of hair. This was grasped and gently withdrawn

through the opening. After the mass of hair was delivered it could be seen that it came from the intestine. The omentum was closely adherent to the bowel and the parietal wall and no effort was made to free it. It was thought safest not to make an effort to repair the bowel, but to leave a colostomy for the time being.

The patient left the table in good condition and on my visit to the wards one hour after the operation she was in good condition. Twelve hours after the operation patient went into a sudden collapse and died in a few hours. The wound was then opened up, but nothing could be found to explain the sudden death. No autopsy.

Note: On close examination of this patient's scalp after tumor was discovered small bald areas could be made out.

Excerpt From a Clinical Discussion. (Vaginal Hysterectomy—Inflamed Aberrant Appendix)

J. W. KENNEDY, M.D., in the *Joseph Price Hospital, Philadelphia*

The patient upon whom we are about to operate is supposed to have a malignant uterus and we are getting ready to do a vaginal hysterectomy by the clamp method.

During my eleven years association with Dr. Price plus my own work, I have had an experience of over three thousand vaginal hysterectomies and I am about to make this discussion to you, namely, that vaginal hysterectomy is the least done of the hysterectomies and yet from the experience just quoted I am privileged to say that vaginal hysterectomy has the lowest operative mortality, the broadest field of usefulness and the very best post-operative history of any major operation of my knowledge. The ease with which vaginal hysterectomy by clamp method can be accomplished and its freedom from shock and post-operative embolus

or sudden heart calamity makes it safe in comparison with any form of hysterectomy by the abdominal route.

Throughout my twenty-three years experience it has had a mortality in the Joseph Price Hospital of from one-eighth to one-fourth of one per cent, which places it far beyond the possibilities of the abdominal route of removing the uterus. Possibly in ninety-five per cent of the conditions for which the uterus should be removed by vaginal hysterectomy, the entire operation will not take over five minutes, and a large per cent of cases can be done in from two to three minutes under gas.

So you see we have a procedure in vaginal hysterectomy with practically a nil mortality and granting its broad field of usefulness, it is of profound regret to me that the procedure has not met with popular favor with the oper-

ating profession. It is by far the greatest life-saver of all the operations of my knowledge.

The mortality of abdominal hysterectomies from the tragedies of the operation, such as embolus or acute dilatation of the heart, which often takes place during a perfect convalescence of the patient is higher by far than the mortality from all causes where the uterus is removed by clamp method as a vaginal hysterectomy; so, gentlemen, I make this preliminary discussion in order that you may accentuate your interest in this case upon whom we are about to operate; or possibly my remarks have been so sanguine that you have already lost interest in me and my subject. However, I will give you the opportunity to at least see with what degree of accuracy some of my statements have been made.

In my entire experience I have never seen a fatal outcome following removal of the uterus for malignancy, that I did not feel there had been sufficient evidence of the condition at a date when, if the uterus had been removed by vaginal hysterectomy, there would have been no recurrence; so the message I want to give you is, that we are not operating at the privileged hour in the acute or urgent conditions and that our mortality in all such lesions is not the legitimate or privileged one, but is too often the outcome of derelict thinking and acting. I am satisfied that over ninety per cent of any operator's mortality in abdominal surgery for the acute and urgent lesions is due to human neglect, so we should more often take an invoice of the knowledge we actually possess of those subjects in order that such neglects should not destroy the ninety per cent of our usefulness. We must do this, gentlemen; we are all guilty.

Coming back to the case before us of supposed malignant cervix; I have not seen fit to remove a portion of the cervix for laboratory confirmation in order to reveal the true pathology. I never approve cutting into the tumor for laboratory test ere its removal; nor would I permit the uterus to be curet-

ted for like investigation. It is wrong to open the active circulation of malignancy in any part of the body as this instantly predisposes to metastasis; nor do I approve the postponement of the operation for malignancy and substitute the x-ray or radium. Wherever an organ can be removed in toto it should be first done and the area radiated later as a prophylactic treatment. I see at this day many cases of malignancy of the uterus which have been passed up by teachers as inoperable and have been treated by radium or x-ray or both, and yet I find such cases quite easily within the field of operability as vaginal hysterectomies by clamp method.

As I expose this cervix I am sure no one with an iota of experience can question the diagnosis, any of our bright young students would certainly call this malignancy. The patient is forty-eight years old, has had four children, and bleeds almost continually. There is an odor from the discharge and you can easily see the area of cauliflower growth quite involving the cervix. This area is very friable, bleeds on the slightest touch; yes, this picture is clear to us all, too clear, and as there is no one in the room whose feelings may be hurt, I can say to you that there is a clear history of this malignancy for over a year, and this is so often the calamity. However, these cases of malignancy of the cervix come to us earlier than either malignancy of the fundus or malignancy of the middle third of the uterus.

It is a grave error indeed for the student of the subject to have the picture which is before us this morning and not know of the other two probable zones of malignancy of the uterus. I refer to malignancy of the fundus and malignancy near the internal os.

The most fatal location of uterine malignancy is near the internal os or middle third of the organ and this is so for several reasons. The profession must ever keep in mind that to dismiss the probability of malignancy of the uterus simply because the cervix is smooth and intact, is to entirely forget malignancy of the fundus or malign-

nancy near the internal os. I would therefore in teaching this subject dwell less on the most conspicuous location of malignancy, namely, that of the cervix, and more forcibly call attention to the less accessible zones of uterine malignancy. Malignancy of the middle third of the uterus is prone to early metastasis, early involves the broad ligaments, bladder or rectum, and ere any destruction of the cervix is apparent. Thus we get these cases later than cervical malignancy.

Malignancy of the fundus is not prone to early metastasis, comes as a rule ten years later than malignancy of the lower half of the uterus and is much the safest of operative risks.

The next message I want to give you is that vaginal hysterectomy by the clamps is in my judgment by all odds the safest and most thorough operation for uterine malignancy. If the malignancy is so diffuse in destructive process that it cannot be entirely removed by vaginal hysterectomy (clamp method), then the most thorough possible abdominal procedure, such as the Wertheim operation, will rarely save a single case and the extensive abdominal procedure will have almost fifty times the mortality of the vaginal procedure. Men have not learned how very much more thorough the vaginal hysterectomy with clamp is than the same operation is done by ligature. The portions of the broad ligaments which are within the bite of the clamp slough away and thus the most proximal portion of the broad ligament which are most apt to be malignant will often be cast off incident to the crush of the powerful Pryor clamp.

If Dr. Price had done nothing other than give the profession vaginal hysterectomy by the clamp method and if the profession could have accepted and received his message, thousands, yes hundred of thousands of lives would have been saved. I make this statement without reservation: the great ease with which the operation can be done, its practically nil mortality, its freedom from post-operative untoward symptoms

would so popularize it with the operating and general profession that thousands of cases which now come to us too late for radical surgery would have been saved, did the popular profession know the sterling rights of this procedure.

As we view this cervix before I begin the operation, do not only take this picture of conspicuous malignancy with you, but most remember my discussion of the other two zones of uterine malignancy which do not indicate to inspection malignancy of the uterus.

The next patient has just entered the hospital and I have not seen the case so we will go over the history together. She is forty-five years old and gives the history of having more or less sudden attacks of pain last night. She has had some nausea and vomited, her temperature is one hundred, her pulse slightly increased. The fact that she is forty-five years of age makes us think of a gall bladder lesion and especially so as this patient gives a history of typhoid fever. We can dismiss the temperature and pulse as pointing directly toward any particular intra-abdominal condition as these symptoms are common to most infectious lesions. First the pain: this has been considerable: she says it has been severe. As I go over this abdomen I find moderate rigidity, more on the right side. The most rigidity is not at McBurney's point, but quite to the right of the umbilicus. There is some rigidity of the entire abdominal wall. As I palpate the region of the gall bladder I do not find the marked hardening of the right rectus muscle just below the costal margin which to me is so very typical of the acutely inflamed gall bladder. The patient gives no history of referred pain to the scapular region, so I will temporarily dismiss the question of gall bladder disease. On account of the suddenness of the pain and more or less diffuse rigidity the question of acute pancreatitis comes up, and is dismissed because I do not find persistent vomiting nor a sufficiently shocked patient for the acute pancreas.

The rigidity of the acute lesions of the pancreas is often quite universal and well marked and the pain is often severe; but the patient with an acute pancreatitis shows symptoms of extreme depression,—pulse rapid and at times almost imperceptible, cyanosis, and other features of a picture of extremis. I am quite sure we can dismiss the acute perforations of the stomach and duodenum. If this patient had had a perforation of the duodenum last night when she had pain she would have been held since then in a vise of pain. The patient will often say after a perforation of the stomach or duodenum "I have not been able to move since I had the first pain," and the rigidity of the abdomen would be universal and board-like. It is scarcely necessary to examine this patient vaginally as the pain is too high and she gives no history of tubal or ovarian trouble. I take it for granted that we have here a perforated appendix and that the appendix is in the illeocecal fossa; if this is so it will account for the more or less diffuse rigidity and tenderness and also explain why we did not have pain and rigidity more marked at McBurney's point. The illeocecal fossa is the second most dangerous location for the perforated appendix, the truly retrocecal appendix being the most dangerous. However, the perforated appendix in the illeocecal fossa early becomes a retro-peritoneal infection and

on account of this more or less midline location and more or less protection from the parietal peritoneum, comes to us late.

The appendix in this location is often perforated before the physician is called.

The great trouble with our teaching in appendicitis has been that too much has been said about the typical symptoms when the organ is located at McBurney's point and not enough has been said of the atypical location of the appendix. Let us teach the student that the symptomatology of appendicitis depends entirely upon the anatomical location of the appendix, and let us also teach him that the normal location of the appendix gives the most marked symptoms and yet is the least dangerous of all the different anatomical locations.

We must teach that the retrocecal appendix, the appendix in the illeocecal fossa and the appendix in the pelvis, each has its peculiar symptomatology and surgical pathology; and just as I spoke to you while viewing the conspicuous malignancy of the cervix, that we should ever bear in mind the possibilities of less conspicuous zones of malignancy of the uterus, so do I say to you now, we must teach the profession the symptomatology of the aberrant locations of the appendix.

The incision reveals a gangrenous appendix in the illeocecal fossa.

Some Contracted Pelves

C. H. C. MILLS, M.D., *Charlotte*

The lesser contracted pelves which the practitioner meets is often not recognized as such until a prolonged or hazardous labor calls for some immediate relief. Ordinarily, the complex classification of the text book is beyond the practitioner's knowledge, but a systematic history and a painstaking physical examination will put him on guard, before labor starts, against the probable existence of any common pelvic anomaly.

In our immediate field, we do not find the marked rachitic pelvis to any great extent, though the simple flat pelvis is often seen. In this the measurements are normal in the transverse, but shortened in the antero-posterior diameter. The generally contracted pelvis, with all diameters lessened is often met, frequently being funnel-shaped or masculine, adding still more to the dangers of labor. A third type, and one

that will be less often recognized, is the high-assimilation pelvis where the last lumbar vertebra takes on the characteristics of the first sacral and fuses with it, making a "six-vertebra sacrum." This may change the shape of the pelvis by making it much higher posteriorly, and the walls of the inferior portion converging give a funnel shape. Again, it may give us a transverse shortening. The narrowing of the pubic arch prevents the occiput coming normally up under the symphysis, and by pushing the head down on the ischio-pubic rami, greatly endangers the perineum to extensive tear.

We will always be rewarded for taking careful histories of our pregnant women, whether primiparae or multiparae; in the latter going well into the character of previous labors and their modes of termination. We should make a careful physical examination of the patient, noting the size and shape of the fetal head, and the general contour of the body and lower extremities. In palpation, in the last weeks of pregnancy, see if the head is engaged. In primiparae, a pendulous abdomen usually means non-engagement, which usually signifies, in turn, some disproportion between the head and pelvis. Non-engagement in multiparae is of no significance.

Outline the child, ascertaining the presentation and position. By mensuration you may approximate the head diameters. You may readily obtain the external measurements of the pelvis, and, if they are below normal, you are called upon to gain further details by internal measurement. Not all lessened diameters will indicate interference. Fully seventy-five per cent will be delivered without aid; the other twenty-five per cent may have to be assisted by forceps, craniotomy, or cutting operations

on the mother. In the flat pelvis, the true conjugate is shortened, and borderline cases, that is, seven and a half to nine c. m., should always be given a trial labor. If engagement occurs, though progress is slow, there is little trouble at the pelvic outlet; but in the funnel-shaped, if the transverse measurement of the outlet is eight c. m., or less, you may look for trouble, the degree depending much upon the available space between the transverse diameter and the tip of the sacrum (posterior sagittal diameter).

In cases where the indication is absolute, the elective Cæsarian section is the operation of choice. If the patient is in labor and has been repeatedly examined under poor surroundings, with probable infection, craniotomy is indicated. In giving a trial labor, before operative procedure is instituted, put the patient to sleep and with the entire hand in the vagina, get the "feel" of the pelvis, especially as to the shape of the sacrum, height, curvature, etc. By grasping the head with the internal hand and pressing with the other over the symphysis, see if the head can be brought down into the pelvis. If engaged; and descent has occurred, forceps may be applied. High forceps are to be regretted. If no engagement has occurred, and there is a probability of extracting the child without danger, version will be the method of choice.

In prolonged labors there is little danger to the child so long as the membranes are intact, but when the membranes rupture, the danger from pressure begins, acting most often by interfering with the placental circulation (asphyxia), or premature separation of the placenta. In moderately contracted pelvis, engagement is often helped by the Walcher posture.

Functions of a Medical Society*

SAMUEL J. KOPETZKY, M.D., *New York City*

The physician as an individual has long enjoyed a high place in public esteem—respected for his skill, loved for his charities and trusted for the self-evident unselfishness daily manifested in his contact with those about him. Not only this, but he has been friend and counsellor in great numbers of households in many intimate matters not connected with the healing art but where his high personal character was felt to give him eminent qualifications as an impartial and competent adviser. Singularly enough, however, it has been a fact that nothing like this degree of confidence has been given to these same physicians when banded together. Too often there was suspicion and mistrust—originating, in all probability, in a general belief in the existence of a spirit of self-interest as ordinarily controlling the acts of man gathered in an association. It therefore becomes a welcome duty on my part to define and explain the true relationship of the members of such an organization as the Medical Society of the County of New York to the community at large.

The duties of this Society are, broadly speaking, threefold: First, they are educational; second, they are political, in the sense of making proper effort to assist in bringing to pass legislation beneficially affecting public health and preventing the passage of laws capable of being used to the detriment of public health; third, they are to give intelligent and helpful co-operation to the work of other professions that are allied to that of medicine. New discoveries in medicine should be reported to the public by a medical organization such as this. Supposed cures should not be allowed to be disseminated, distorted by ignorance and magnified by self-in-

terest through the greed of quackery or through any other unworthy motive. We should furnish the press, the radio and other worthy publicity agencies with *bona fide* news, in the confident expectation that they, on their side, will co-operate with us to the end that all medical news published shall be authentic and trustworthy, and thus beneficial to the people. It seems clear to me that there is a very definite obligation along this line on the part of those who control publicity channels, and I am glad to express my belief that this is being more and more manifestly observed by those who control our great newspapers and other avenues of public information. Whatever may be the latitude that the law allows, there certainly is a distinct moral responsibility resting upon all those who have access to the public eye and ear, in whatever manner, to lend their agencies to educational programs for the betterment of community health, and to refuse to spread the pretensions of the advertising quack or the vagaries of deluded enthusiasts.

There is great need for the authoritative instruction of the public in the field of preventive medicine. This has rightly made a very strong appeal to the imagination of the people, and it is equally the role of this Society, and of the various publicity mediums of which I have already spoken, to see that none but the proper seeds fall upon the receptive soil of public interest. The Medical Society of the County of New York was one of the pioneer medical organizations to recognize this; and, in conformity with the view that it is easier and better to stay well than to get well, it has instituted extensive machinery to enable the doctor to perform, and the entire public to receive, a health examination periodically. It is our purpose to make the physician more alert to recognize early signs of disease, and to educate the public not to wait until sickness

*Abstract of Inaugural Address of the President of the Medical Society of the County of New York, January 26th, 1925.

actually comes, but to look for advice, at regular intervals, on how to remain well.

Still another important duty of ours is to expose quackery within and without the medical profession. Many persons believe that such organizations as ours oppose irregular medical practice for economic reasons. This idea is exceedingly superficial. Charlatanry does not menace the physician, nor does its presence lessen the number of patients that physicians are called upon to treat. The real danger is for the sick and the ailing. The victim of the quack eventually reaches the physician; and when he does, it is usually with a condition which has arrived at the chronic stage and which requires prolonged treatment for a cure—even if a cure be possible at all. Inasmuch, however, as even the intelligent person is rarely able to detect the falsity of the pseudo-scientific claims made by various cults, this Society, and all others like it, must expose the fads and "isms" which arise—and do this not by arbitrary denunciation but through a clear analysis of their fallacies. Where, as in physical culture and various dietary fads, there is some element of truth in the cult's theory, it should be defined and its limitations explained. Many people would be saved from exploitation by quacks if they were made to realize the downright absurdities, frauds, and half-truths on which these irregular systems rest.

Coming now to the proper political activities of our Society, it is of course proper for me to point out that it is a primary obligation upon our legislators, regardless of party, to do all that they can to promote the preservation of the health of the people. Where may they more properly turn for advice on so important a matter than to the organized medical profession? The County Medical Society has no paid lobbies. It does not engage in legislative trading of any kind. But it has, in its Committee on Legislation, a group of vigilant, farsighted physicians who analyze every measure introduced into the Legislature that has any bearing whatever upon the practice of healing. Endorsement is

given to those bills that will promote health and defend the people against the depredations of chicanery. Similarly, legislation is opposed when designed to admit untrained and unqualified men to the care of the sick or to hamper the advancement of medical knowledge.

Hand in hand with law enactment is law enforcement, and I say to you that the Medical Practice Act, while seemingly foolproof, is in reality enforced with great laxity; and it is only when an extremely sensational instance of the dangers of irregular practice comes to light—as with the Connecticut diploma mill exposure or the death from diphtheria of a child who was treated by chiropractic instead of the administration of antitoxin—that there is a spasmodic flurry of enforcement. This Society exacts the highest scientific standards from its members and it has a right to expect the community to demand the prosecution of quacks and of unlicensed practitioners of various cults.

Such allied professions as pharmacy, dentistry and nursing work in so close a relationship with medicine that anything that lowers the efficiency of their operation is bound to react upon our own efforts.

With regard to nursing, a very difficult situation has arisen which it is essential that this Society should attempt to solve. A type of nurse has been evolved which, while very valuable in public health work, is becoming more and more unsuited to the bedside tasks that are the essential features of her profession. Drawn from the better educated classes, the nurse of to-day is unwilling to perform the more menial tasks that are assigned to her, and frequently, when stationed in a home where there is sickness, requires for herself a service and attention that are an additional burden to a family already disrupted by illness. The best equipment for the nurse, outside of the simple technical and anatomical knowledge that must necessarily be part of her training, is a cheerful desire to serve, a tactful sympathy, and the ability and willing-

ness to carry out the doctor's orders implicitly. Several instances have come before this Society wherein supposedly reliable registries have sent out women who were personally totally unfit to assume the responsibility devolving upon a nurse. Cases like these are due to the failure of the registries to investigate properly the applicants for positions, and one result is to discredit a profession that actually has an exceedingly high personal average. We propose to work out an arrangement whereby this Society can exercise some supervision over the nursing registries analogous to its position in the matter of certified milk and commercial laboratories—to the benefit not only of the public but of the nursing profession as a whole.

In bringing to pass the results that I

have endeavored to point out, much can be done through the regular machinery of this Society—through its administrative bodies, through its counsel and through *The New York Week*, its official organ. Likewise, co-operation with other organizations is needed and with the press, the radio, the moving picture and all other agencies for public information whose operations can be effectively supplemented by the expert knowledge that this Society is prepared to bring to bear in checking cheap sensationalism and in supplying, in its place, medical information of reliability and therefore of important public usefulness.

51 West 73rd St.

Some Clinical Considerations in Brain Tumors

A. A. BARRON, M.D., F.A.C.P., *Charlotte*

It is not within the scope of this paper to review the anatomy and physiology of the brain, nor is it the writer's intention to try to cover brain tumor symptomatology in its entirety. In a brief way, however, I wish to review some clinical points and report a few cases. The facts that brain tumors are just about as common as tumors in other organs and that they are frequently overlooked or misdiagnosed makes the subject one of importance and should make it one of interest. If it serve no other purpose, a review of brain tumor records may serve to emphasize the importance of careful clinical studies—the study and interpretation of symptoms, a most urgent need in present day medicine.

Case No. 1. J. D. G., boy, age twelve. Was seen on June 4, 1924. Referred for explanation of frequency of urination.

History (Summarized): His birth was normal. He has suffered from enuresis all his life, otherwise enjoying good health until two years ago. About

this time he began to suffer occasional attacks of headache, usually felt or noticed in frontal region. Some six months later, or about eighteen months ago, eyes became sore and red. Eyes were treated locally. About six months later complained of not being able to see well. Failed to pass in his school work. Tonsils removed. For about six months has had to void urine every hour or so during the day. Family history negative.

Examination: (Important findings).

Well nourished boy showing a tendency to obesity, of average intelligence for his years, but appears somewhat stupid. His breasts are slightly larger than normal. His pelvis is somewhat effeminate in type, genitalia infantile, no hair on body. Examination of eyes shows complete atrophy of the primary type of left disc. Right eye fundus about normal in appearance, possibly a little pallor in the temporal half of the right disc (Sloan). Pupils are equal and react to light and accommodation. X-ray of sella turcica shows it to be

greatly enlarged, the posterior clinoids and dorsal portion being partly destroyed. His examination otherwise was essentially negative. There was no disturbance of pain, heat or touch sense—no paralysis. Nothing abnormal in his cardio-respiratory organs. Urine was of low specific gravity. Complete blood study negative.

Impression and Disposition:

His general makeup at once attracted me to a probable pituitary tumor which was confirmed by further examination, and a diagnosis of pituitary tumor was made. He was referred to Dr. Wm. G. Spiller who confirmed above diagnosis and he was sent to Dr. C. H. Frazier for operation. On operation a supra-sellar cyst was found. The cyst was evacuated. He made a very good recovery.

Pituitary tumors, or tumors that are directly associated or impinged on the pituitary may produce diagnostic symptoms in two entirely different ways:

First: you may have signs of the disordered activity of the gland itself, as hypo-pituitarism, hyper-pituitarism or dyspituitarism. Second, and more frequently in pituitary tumors, there are focal symptoms produced by pressure on adjacent parts, chiefly and notably, on the optic chiasm. Marked obliteration of clinoid processes occurs often in conditions which produce general increase in intra-cranial pressure, so obliteration of these processes must always be considered guardedly. In the case reported above the cyst was probably a residual condition originating in Rathke's pouch.

Case No. 2. R. H. A., age 40, married, farmer. Seen November 10, 1924. The history of this case is very interesting. His present trouble is dated back to an attack of influenza two years ago. He has suffered with "head trouble," loss of energy, lack of interest, and general weakness since. Weakness has been a very noticeable symptom to him. Changes in his makeup, lack of interest, indifference, very noticeable to his family and friends. Six weeks ago his "head trouble" became more acute. (The "head trouble"

spoken of by him was frequent, dull, boring attacks of headache through forehead and in top of head.) He was examined and an operation on the right antrum was performed. About two weeks later he was re-examined, the right antrum was re-opened and definite evidence of trouble was found. Satisfactory improvement was not made and he was referred for a general examination.

Examination:

Fairly well nourished man, complexion somewhat sallow, looks sick. General examination essentially negative. Nothing found in cardio-respiratory or urinary tract of significance. Neurological examination essentially negative. Pupils equal, regular and react normally. No paralysis; no evidence of any sensory disturbance. Complete blood study and spinal fluid study reveal nothing of significance.

His general appearance of being a sick man and his very apparent mental changes were very striking. He was an intelligent man and led an active life up until two years ago. For the past two years his makeup has progressively changed for the worse. Instead of being active and energetic he has become more or less listless and dull. He was, previous to his present trouble, very neat and tidy in his dress. He has now become rather indifferent to his dress and careless in his habits. Otherwise shows no evidence of mental deterioration. In order to get a complete eye study he was referred and on examination of dilated pupils, by medication, a bilateral choked disc of about four diopters was found (Sloan).

Impression and disposition:

Because of his mental changes and his eye findings a probable frontal lobe tumor was thought to be present. He was referred to Dr. Frazier, who made a presumptive diagnosis of frontal lobe tumor, probably left. After two operations, Dr. Frazier was led to believe that there was a deep seated endothelioma at or near the base of brain. Because of the general condition it was not considered wise to remove the growth

but to wait until a later date to consider this.

Case No. 3. Mrs. P., age 64, seen with complaint of difficulty in walking and stomach trouble. Trouble began about eight years ago. The first symptom was some impairment in hearing in left ear and numbness in left side of face. She soon began to suffer with nausea and vomited at irregular intervals. Head frequently felt sore all over. She was treated for these complaints. In 1919 she developed facial paralysis on left side, also some disturbance of locomotion—tendency to a little unsteadiness on her feet. Headache rather severe at times, mostly in back of head. Her vision began to fail, nausea and vomiting became a little more pronounced and her condition gradually grew worse.

Examination: Unsteadiness was so great that she was unable to walk without assistance; there was a tendency to fall to the left. There was a peripheral paralysis of the left facial nerve, diminution of pain, touch, and temperature sense over left side of face showing involvement of left trigeminal (5th) nerve. On the left side, there was complete auditory (8th) nerve deafness, paralysis of the external rectus of eye (6th) nerve, loss of corneal and pharyngeal reflex and partial loss of taste. Fundi showed double choked disc. Knee jerks active, abdominals weak, no astereognosis, no adidokokinesia. Physical examination, otherwise, and blood, urine, stomach analysis, spinal fluid, and x-ray pictures negative.

The involvement of the facial, trigeminal and auditory nerves on the left furnished practically positive evidence of a tumor in the left cerebello-pontine angle, the remaining symptoms being due, in the main, to pressure.

In tumors of this location, the facial nerve involvement may be displayed by irritative signs, as twitching, or by clonic or tonic spasms, and the first subjective ear symptom may be a buzzing sensation or tinnitus as seen in the following case:

Case No. 4. J. B., male, age 42.

Complaint—buzzing sensation in right ear, dull headache in occipital region, tight sensation around right eye and dizziness. History: About one year previously began to suffer with roaring and buzzing sensation in right ear. Six months later this became more pronounced; about three months later frontal and occipital headaches began; two months later, numbness, and twitching in muscles of right side of face. About this time, dizziness was frequently noticed when walking. Sometimes felt as if he were drunk, (tendency to stagger to the right, never fell.) For several weeks thought vision in right eye was failing. Has worn glasses for four years. No nausea or vomiting.

Examination: Locomotion was noticed to be somewhat unsteady especially when stooping or turning quickly. Walked a little wide-legged; twitching of muscles of lower right face frequent. Was unable to hear watch tick two inches from right ear. It was doubtful just at this time whether he had a true inner ear deafness or not. He complained of numb sensation over right side of face supplied by the fifth nerve, but objectively, pain and thermic and touch senses were normal. He had double choked disc, more pronounced in right eye, lateral nystagmus, more noticeable in looking to the right, absent pharyngeal reflexes on right with probably some little diminution of taste on posterior third of tongue. Slight swaying in Romberg position, no paralysis. Physical examination, otherwise, and laboratory findings showed nothing significant.

Clinical diagnosis of right cerebello-pontine angle tumor was made. This was confirmed by operation by Dr. Harvey Cushing, to whom he was sent.

Case No. 5. J. R., male, age 21.

Was always healthy until two years ago when he suffered with erysipelas having a rather bad attack and not recovering before present symptoms started. He attributed his present condition to this. History as follows: Some five or six months after attack of erysipelas (about eighteen months ago) began to com-

plain of uncomfortable dull aching and pain in back part of head. Eyes were examined and a refractive error was found. Glasses were prescribed which improved sight, but did not relieve headache. In July, 1922, noticed some little deafness in right ear. In September, 1922, additional symptoms of slight unsteadiness and some little dullness of intellect manifested; as he reports, noticed some little difficulty in quick thinking and in counting (occupation that of bookkeeper). This caused him to seek work on the outside. Was a member of a military company and noticed in doing "about face" that he was somewhat unsteady and sometimes had a tendency to fall. Tonsils were removed without beneficial results. During the holidays there developed some weakness in right side; speech became more or less thick. A week or so later, weakness in right side, unsteadiness of gait became more outstanding and vision seemed to be impaired.

On examination, in addition to the involvement of the eighth, seventh and fifth nerves, which he showed by inner ear deafness, facial nerve paralysis, and sensory disturbance to pain, respectively, he exhibited a slight hemiplegia on right side. Gait was fairly normal with the exception of a slight tendency to drag right foot. Speech was somewhat thick, hesitating at times. Bilateral choked disc was present. All deep reflexes were increased, right knee jerk being more active than left and on this side there was non-continuous ankle and patellarclonus, right abdominal and right cremasteric absent, right corneal and right pharyngeal diminished. Lat-eral nystagmus. Patient was referred to Dr. Cushing and operation exposed large right cerebellopontine angle tumor.

Case No. 6. H. F. male, age 42. Was clinically diagnosed a left temporo-sphenoidal tumor, which diagnosis was confirmed by autopsy. Before reporting this case, it may be well to recall briefly, first, that the center of hearing or comprehension of spoken language is supposed to be in this region.

Any involvement or destruction of this center causes word deafness which manifests itself in some difficulty in understanding spoken language; also word forgetfulness, and inability to name objects in part; and, second, that tumors which impinge on the uncinate gyrus may be attended by sudden attacks commencing with olfactory or gustatory sensation, smell being usually unpleasant followed by dreamy states lasting for several seconds. These may pass on directly to a general epileptiform fit. This is an important point to think of in examining epileptics. This case, in addition to word deafness, had also word blindness, in that, though he could see, he was unable to understand written words. Though he was not paralyzed, he was unable to write (agraphia). He also suffered with inability to recognize objects in right hand (aestereognosis).

History: Healthy until some seven months ago when he began to complain of vague headaches; two months later while working on his farm, experienced sudden numb-like sensation in arms and legs. This was followed by rather severe frontal headaches, nausea and vomiting. He walked to his home and after spending two days in bed was sufficiently recovered to return to his work. Continued to have some vague headaches. About three weeks later, had another similar attack. Following this attack, aphasic symptoms developed. He could no longer read and frequently appeared confused. Three months later, began having epileptic-like convulsions. In spite of his condition, continued to look after some duties on his farm.

Examination: Gait normal, no swaying in Romberg position, station on either leg alone good. Face when at rest or on movement showed no inequalities. Tendon reflexes were slightly more active on right side. There was a suggestive Babinski on right; had difficulty in recognizing objects in right hand. Pain and thermic senses normal. Pupils were equal, regular and reacted normally. Examination of fundi failed to reveal any evidence of an optic neuro-

tis. Arteries and veins were normal and no signs of pressure were present. Visual fields showed some limitation of vision to the right (right homonymous hemianopsia). Sense of smell and taste appeared normal. Mentally, patient was well orientated, very excitable, very anxious to co-operate, memory deficient. He sometimes mumbled his words, but had no definite jargon; in reply to questions such as, "How do you feel.", would say, "Good," when he meant "Bad." Realized his mistake in a few seconds. Once when asking for shoes asked for hat. Failed frequently on carrying out simple spoken instructions. He had difficulty in picking out a particular object called for from a group of objects placed before him. Was unable to understand printed or written words, but was able to spell out the individual letters of a word. He was unable to write legibly and when asked to copy a sentence, made a series of unintelligible marks. When asked to write the alphabet, made an "A," then "G," then a series of curved lines. The case passed from observation and later died.

Discussion

Cerebellar tumors occur probably more frequently in children, grow rather rapidly and are not rare. Sever-

al cases have come under observation but it was not possible to confirm any of them, either by observation or autopsy.

In general, in making a diagnosis of brain tumors, the problem is not merely one entailing anatomical and physiological knowledge. The time at which focal symptoms make their appearance is of essential importance in relation to localization, hence the early history of the case demands particular attention as early focal symptoms are, as a rule, attributable to the direct effect of the growth upon the brain in its immediate vicinity. Focal symptoms of later appearance, on the other hand, are often, though by no means always, due to increase in pressure as in two cases referred—one to Dr. Cushing, the other to Dr. Frazier, which presented rather definite evidence of pituitary involvement, but on operation no pituitary tumor was found. Encephalitis, cerebral syphilis, nephritis, and lead poisoning may present symptoms that simulate those of a brain tumor.

318 Professional Bldg.

Why Do Patients Go To Quacks?

ROBERT T. MORRIS, M.D., *New York City*

Here is a list of some of the cases that I have seen recently that have been in the hands of quacks:

Number 1. A young artist who had suffered from duodenal ulcer for many years; sometimes better, sometimes worse, but always on a diet regime with the backbone taken out of life for him. He finally went to a chiropractor, who gave him violent manipulation. He became improved very much in general health, gained in weight and in spirits and felt better in every way while the

treatment was being continued. After a while this became monotonous and his symptoms all returned. He had previously consulted many regular physicians but decided that he must try at least one more after the charlatan. The patient was found to be sensitized to lipoids and he removal of eggs from his diet list apparently cured him completely and permanently of his ulcer. This man went to a quack for the reason that no one had taken the trouble to determine if he was sensitized to any of

the ordinary food products, one group of which caused elective affinity disturbance in the region of the duodenum.

Number II. A man who is a good sportsman, enjoying out-of-doors life to the limit, but for the past ten years deprived of his pleasure in the field because of pyloric ulcer. He had been under treatment conducted by experts but became discouraged whenever his cyclical distress appeared. He finally went to an ostopath who gave him violent treatment and made him so much better that he felt like a "fighting cock" as he told his friends, many of whom promptly marched off to such a successful practitioner. When the treatment became too tiresome and expensive he decided to try at least one more member of the medical profession who found that he was suffering from marked esophoria with corresponding eye muscle imbalance. A radiograph of his teeth showed three infected tooth roots, all of which were sending toxins doubtless to the elective affinity area in the pyloric region; such toxins frequently cause overaction of antibodies and a resulting ulcer from autolysis. The man became practically well and could eat almost anything in less than a month from the time of correction of his eye muscle imbalance, even before the tooth infection had received attention. He went to a quack because no one had taken the trouble to determine if he was suffering from eye muscle imbalance, which sends afferent disturbing impulses to the base of the brain with efferent response in the abdominal sympathetics. It is true that one or more of the physicians had this patient's eyes examined but the ophthalmologists reported upon "the sight." They were incompetent, therefore, for giving an important opinion to the physicians who had depended upon them for expert testimony.

Number III. A sprightly young woman, literary and extremely active suffered from occasional sharp pain in the appendix region. She had a short sternum, and narrow costal angle. Most of the patients with a short sternum and narrow costal angle manage to have

the appendix removed by somebody before they have gone very far these days, and such was the case here. The young lady gained distinctly in health for a while after the appendix was removed but having gotten by the effects of suggestion and of physical reaction her symptoms in the appendix region returned, and she was no better off than before. She went to a christian scientist and in a few months had red cheeks and a happy look, was back at her literary work again and made such a distinct response that some of her friends who had been skeptics doubtless turned toward christian science themselves. After a while the novelty of the faith began to wear thin in spots. The young lady gradually dropped away from stimulating psychic influence and was soon back again with her old troubles. Tom Foley, the New York politician, used to speak of "honest graft." Christian science healers are often "honest quacks." This patient went to a quack because no one had taken the trouble to arrange for general abdominal support and for appropriate postural exercises. Such treatment would have had a tendency to hold the sagging colon where it belonged, to carry a loose kidney somewhere near Gerota's pouch, and would have taken the mesenteric drag from the second part of the duodenum. When the doctor who finally did this had completed his work the young lady was then ready to take part permanently in useful activities and remain an active unit in the social system, although she never can be quite well because of carrying the hereditary entailment of stigmata of physical decline. Evidence of this should have been apparent to all of her previous physicians of the regular school after they had noted the short sternum, high arched palate and narrow costal angle.

Number IV. A woman, fond of traveling, suffered occasional attacks of sharp pain in the appendix region and with general digestive disturbance. For a number of years she had expended much time at health resorts in Europe and in America, receiving ex-

pensive treatment, some of which helped her for a while and some of which did not. She finally went to a chiropractor who bruised her and injured her so severely that continuation of his treatment was out of the question. Why did she go to the quack? Because no one up to that time had determined that she had a chronic fibroid involution of the appendix that was precipitating her gastro-enteric symptoms. Some of the doctors whom she consulted said that she had chronic appendicitis. Others equally eminent scouted the idea leaving her in the state of mind of most patients who consult eminent specialists instead of leaving the whole question to some one first rate general practitioner, allowing him to select the consultants and to come to his own decision in his own way. The consultants who said that there was no chronic appendicitis based their opinion, the patient said, upon the fact that there was no tenderness over the appendix itself. To be sure there was not. In almost all of the cases of the five different kinds of chronic appendicitis the tenderness is not at the appendix but at the site of a hyperesthetic fused ganglion situated a couple of inches to the right of the navel and a trifle below. The tenderness is elicited on deep pressure at this point, not at the appendix. Patients who have a hypersensitive right fused ganglion also have a chronically distended ascending colon, a fact which may be readily demonstrated by percussion. This patient had gone to a quack because first rate doctors had been such busy men that they had not found time to get up to date and make a correct diagnosis of chronic appendicitis. This

patient became permanently well after her fibroid appendix had been removed.

Number V. A young woman who was very much engaged with social service work but who was never quite well, suffering from periodic headaches. There was more or less menstrual pain with gastric disturbance at such times. She was in a position to consult the very best diagnosticians, a number of whom had opportunity to keep her out of the hands of the osteopath whom she finally consulted. In this case the patient did not making the temporary good response that is so frequently made by patients in the hands of faddist practitioners. She became more nauseated and lost flesh more rapidly. The physician who was finally consulted in the case found that she had a chronic tuberculosis involving both lungs. The first radiographer who had examined the chest had not discovered the tuberculous nodes. It was a second radiographer who brought them out clearly and distinctly. This patient when put upon appropriate treatment gained thirty pounds in weight and became extremely active in outdoor sports and intellectual occupation. The reason that she went to a quack was that she had not consulted physicians who were insistent enough upon having the right radiographer make pictures.

Here we have but five cases quoted. The article has already become so long that I cannot go on to a description of many other patients of my acquaintance who went to quacks. Some of these patients were temporarily elevated upon Abrams' Ionic column. All were of the first rate, intelligent sort.
114 East Fifty-fourth Street.

Dietitian.

Applications for dietitian will be rated as received until Jun 30, 1925. The examination is to fill vacancies in the Veterans' Bureau and the Public Health Service, at entrance salaries ranging from \$1,020 to \$1,680 a year.

The duties of the position are to purchase the food supplies for all messes operated in the hospital; to plan all

menus, both for patients on ordinary diets and diets with reference to special diseases; and to supervise the preparation and serving of all dietaries in the hospital, both to patients and personnel.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Ureteral Obstruction Based Upon a Study of One Hundred and Fifty Cases*

J. D. HIGHSMITH, M.D., *Fayetteville, N. C.*

The failure to recognize ureteral obstruction frequently results in unnecessary operations. It is difficult to make a differential diagnosis of ureteral lesions from the symptoms and signs presented by the patient. This is largely owing to the anatomic relations that the ureters bear to the adjacent structures, and the variety of etiological factors and secondary urologic changes.

A review of the cases of renal lesions treated by us in the past four years shows that practically all are mainly caused by obstruction in some form. It seems that however great the load thrown upon the kidneys they will stand up under it remarkably well provided free drainage is maintained. Bacteria will not often remain in the kidneys long enough to produce damage unless there is some obstruction in the drainage tract.

The cases of partial obstruction and the slowly progressing or intermittent obstructions are the ones that demand our special study, first, as to diagnosis; second, treatment, and third, actual amount of kidney changes that have taken place. Cases of sudden complete obstruction are usually recognized.

Obstruction of the ureter may be intrinsic or extrinsic in origin. It may be either congenital or acquired. The obstruction may be produced in early life by a kidney inflammation of childhood, and in adult life be transformed into an active disease process by a simple bacteremia which in itself would be harmless. One of our recent cases gave a history of a fall from a wagon at the age of eight years, at which time she must have injured her right kidney as she was confined to bed for several weeks suffering with pain in the kidney region and hematuria. At the time of

admission to the hospital she was twenty-two years of age, not married and had pyelonephritis in a slightly movable right kidney.

In the group of one hundred and fifty cases in this series the largest number occurred in the most active period of adult life. The youngest patient treated was a girl of eight years, who for two weeks had been treated for chills and fever. There were six cases between the ages of eight and thirteen years. The oldest patient treated was seventy years.

AGE INCIDENCE.

8 to 13 years	-----	6 cases;
14 to 24 years	-----	32 cases;
25 to 35 years	-----	52 cases;
36 to 46 years	-----	36 cases;
47 to 57 years	-----	16 cases;
58 to 70 years	-----	8 cases.

In this series one hundred and eight cases occurred in women and forty-two in men. This can be accounted for by the large percentage of ureteral kinks and angulations due to the varying degrees of mobility of the kidneys, pressure from the pregnant uterus, diseased tubes and ovaries and tumors other than pregnancy. The cases of ureteral calculi were about equally divided.

In fourteen cases the obstruction was complete; in thirty it was intermittent, and in one hundred and six cases partial. In four cases we could not get by the obstruction with a ureteral catheter, and surgery had to be resorted to as an emergency measure. In one case we removed an impacted ureteral calculus; in one a pyelotomy was done. In the other two cases nephrectomy¹ for hydronephrosis was performed. In one there was a kink over an aberrant blood vessel, the ureter being fixed in a kinked position and bound down by adhesions.

Ureteral kinks and angulations were the principal causative factors in the

*Read before N. C. State Medical Society meeting Raleigh, N. C., April, 1924.

obstructions, ninety of the one hundred and fifty cases coming under this classification. Thirteen of the ninety cases were due to the freely movable or floating kidney; thirty-four were caused by the slightly movable or ptosed kidney; in four cases the kink seems to have been due to trauma, and two were kinks over aberrant renal blood vessels. In thirty-four cases the kinks were due to pressure from without. In seven cases this followed disease of the appendix; in thirteen the pressure was from the pregnant uterus; in two from fibroid tumors of the uterus; in five cases inflammatory infections of the tubes and ovaries were responsible. One ovarian cyst, and six post-operative adhesions in the pelvis, two of these secondary to drainage of pelvic abscesses, complete the list.

There were thirty-two cases in which the causative factor was ureteral calculi. In all but one case it was possible to get by the stone with either a catheter or bougie, which was left in situ, thus relieving the pain and draining the kidney.

There were twenty-three cases of ureteral stricture, nineteen of which were inflammatory and four tuberculous in origin.

In two cases the obstruction was due to blood clots; in one case a diverticulum of the bladder; one a bladder diverticulum containing a large sized stone and one a large vesical calculus filling the bladder and causing obstruction at the ureteral orifices.

Some writers speak of a congenital valve formation at the ureteral orifices which if not relieved will result in hydronephrosis; we have not seen any of these cases.

Spasm of the ureteral wall has been observed by us, most frequently in highly nervous patients. As a rule it is noted that as soon as the catheter enters the ureteral orifices the ureter grips the catheter, and the harder one pushes the catheter the tighter it is gripped by the ureteral wall. By withdrawing the catheter and inserting another it will often pass without difficulty. Cases of ureteral obstruction due to papilloma of

the ureteral margins have been observed by some writers. Another condition that occurs is ureteral occlusion due to sudden enlargement of the prostate gland which is most prominent intravesically causing a pulling and angulation of the vesical portion of the ureter, and back pressure on the renal pelvis.

Of the fifteen cases presenting the too freely movable or floating kidney, with symptoms of obstruction, the majority were in women who had borne children and were very thin. However, there were two men in this group and three young women who had not borne children.

The ptosed or slightly movable kidney is the type that presents the greatest problem not only as to diagnosis but also as to its treatment. It is most frequently met with in women who have borne many children and have had repeated attacks of pyelitis. We find this also quite frequently in men and children. While the ureters are apparently well protected by being deeply placed in the abdomen, shielded posteriorly by the muscles of the back and bony pelvis, and anteriorly by the peritoneum and its contents; they are particularly liable to pressure from without, since they lie upon a firm bed favoring compression from in front. This is particularly true as they cross the iliac vessels at the brim of the pelvis, the ureters being angulated at this point. There is also a tendency to angulation at the uretero-pelvic junction and again as they enter the bladder wall.

Blood clots, plugs of pus or collections of gravel may lodge in the lower ureter and give rise to violent attacks of colic. The obstruction is easily relieved by passing the ureteral catheter.

Calculi in the upper ureter are found less frequently than in the lower portion. Few calculi pass through the lower three centimeters of the ureter without causing intermittent obstruction thus interfering with kidney drainage. Some become impacted temporarily; others remain here, slowly increasing in size, causing back pressure upon the kidneys with a slow renal destruction and usual-

ly renal infection. Five of our cases of ureteral stricture in the lower portion gave histories of having passed calculi following severe attacks of kidney colic.

The symptoms complained of are often very perplexing. The classical kidney and ureteral pains are known to all of us; but, in the majority of cases the pain is not classical. It is the exception rather than the rule in a case of kidney colic to get pain along the course of the ureter radiating downwards. More often it is generalized abdominal pain without any typical radiation. In thirty-two cases of ureteral calculi in only six was the pain classical.

In this series an analysis of the most prominent symptoms showed pain in the lower abdomen to be the most common complaint, this occurring in forty-two of the one hundred and fifty cases, the location being in the region of the appendix in thirty cases and associated with nausea and vomiting in ten. Generalized abdominal pain occurred in thirteen cases, and followed the course of the ureter in six. The pain was in the kidney regions in thirty-nine cases and in the upper abdomen in thirteen. Four patients came complaining of backache, nine of chills and fever, and five hematuria. Bladder symptoms were the most common complaint in seventeen cases, painful micturition heading the list with ten and increased frequency next with seven.

All of these conditions have a more or less common symptomatology. The commonest errors in diagnosis are those of confusion with disease of the appendix and pelvic organs.

The blood and lymphatic supply of the ureters bring them into intimate relationship with surrounding organs; and the nerve supply from the spermatic plexus of the sympathetic system explains the complexity of symptoms and the difficulty in the differentiation of ureteral lesions subjectively.

It is very important that the presence of obstruction should be determined early. Many patients go along for years with a partial or intermittent ureteral obstruction before the diagnosis is

made and then a condition is often present which makes nephrectomy necessary. Correct diagnosis depends on a careful case history, physical examination, urinalysis, and the use of the cystoscope, ureter catheter and urography. Negative microscopical findings on urinalysis by no means excludes ureteral disease, for obstruction may be present without inducing any changes in the kidney, and obstruction may be so complete as to stop the flow of urine from the affected side.

Cystoscopic examinations were made in all this series of cases and the ureter catheterized. Frequently the wax-tipped catheters were employed in the diagnosis of stricture and calculi.

Urography was carried out in one hundred cases including the thirty-two cases of ureteral calculi. All the slightly movable kidneys (of which there were thirty-four in the series) were diagnosed by means of pyelo-ureterograms. The ureteral kinks are not visible with the catheter in the ureter as the catheter acts as a splint. It is, therefore, necessary to withdraw the catheters well down into the bony pelvis and inject the ureters afterwards, or better still plug the lower end of the ureter by means of a Garcian catheter and inject a 25 per cent. solution of sodium bromide into the ureter and renal pelvis. It sometimes becomes necessary to make pyelograms, with the patient lying down, and sitting up.

The x-ray cannot always be relied upon to reveal the presence or absence of a calculus. Out of thirty-two cases the x-ray gave negative results on five cases where the calculi were afterwards removed by means of the cystoscope.

In one of our cases there was a bilateral renal occlusion due to bladder diverticuli, both of which were adherent to the ureters. When the patient was first cystoscoped it looked as if there were four ureters, two on each side. The x-ray revealed the catheters coiled up in the diverticuli. Cystograms gave additional proof. Transvesical removal of the linings of the sacs with drainage

gave this patient complete relief from all symptoms.

The preparation of the patient for the kidney operation is just as important as that for a prostatectomy. If we study our cases carefully it will be seen that the supposedly sound kidney is suffering not only from the increased work thrown upon it, but from absorption due to the diseased kidney. It is therefore necessary to establish free drainage from the sound kidney by means of ureteral dilatation before operating upon the diseased kidney.

All of the cases in this series excepting three who were nephrectomized for tuberculous kidneys, were treated by means of ureteral dilatation, the ureters being dilated to No. 12 French, and larger in some cases. Seventy-one patients had some form of operation for relief of obstruction in addition to the dilations. There were five nephrectomies for pyonephrosis, and four for hydronephrosis in this series. Drainage from the healthy kidney was maintained by ureteral dilatation, this being commenced from ten days to two weeks after the operation. As a rule not more than three such treatments are necessary.

Nine uretero-lithotomies were performed. The patients were cystoscoped and ureters catheterized on the seventh day after operation and from then on every third day until a No. 11 F. could be passed with ease.

Eleven appendectomies were performed, in five instances with removal of one tube and ovary. Three operations were performed for pelvic adhesions, three hysterectomies done for pus tubes, and four for pelvic tumors. Two suprapubic cystotomies were performed for large vesical calculi which were filling the bladder and causing obstruction at the ureteral orifices. One patient was operated on for diverticuli of the bladder which were causing bilateral ureteral occlusion. In the thirteen cases in which there was a pregnant uterus it was necessary to do an abortion on two. One of these patients had hyperthyroidism and the other a cardiac decom-

pensation. Renal fixation was performed on ten patients. Two of these showed the ureter fixed in a kinked position by adhesions necessitating freeing. Where the kink is due to aberrant blood vessels these should be ligated and severed. When adhesions are present and causing symptoms they should be broken up and the ureter freed.

In twenty of the thirty-two cases, the ureteral calculi were removed by non-operative procedures, ureteral dilation proving the most efficient. The majority of these calculi were impacted. The number of treatments required varied; the smallest number required being two, the largest eighteen or twenty, over a period of eight months.

Frequently a major surgical operation is rendered unnecessary by prolonged drainage with a ureteral retention catheter. This is indicated in all cases of renal lesions accompanied by stasis that will not yield to ordinary methods of treatment.

Among the general methods of treatment employed, were rest, bowel regulation, increased intake of water, urinary antiseptics and frequently alkalies. In very stubborn cases, where the renal infection is severe and accompanied by stasis, we give two to five thousand c.c. and more of normal saline by hypodermoclysis daily with splendid results.

An analysis of the results obtained in this series showed the following:

Cured	101;
Improved	40;
Unimproved	7;
Died	2.

No case was pronounced cured until the urine from the kidneys was free of pus and bacteria and free kidney drainage had been reestablished.

In the group of cases which were improved in most cases there was a slightly movable kidney. I doubt if a permanent cure can be produced in these cases without renal fixation.

In the group of seven cases which were unimproved the chief cause was refusal to go on with treatment.

In the group of two cases that ter-

minated fatally, one was a white female aged sixty, who had a nephrectomy for a pyohydronephrosis in a too freely movable right kidney. At operation it was shown that she also had an extensive carcinoma of the liver. An autopsy proved this. The other case was a male aged fifty who had a large vesical diverticulum. He died in uremic coma. An autopsy showed numerous abscesses in the parenchyma of both kidneys, with tremendous dilated renal pelvises.

CONCLUSIONS.

1. The cases of partial obstruction and the slowly progressing or intermittent occlusions are the ones that demand our special study.

2. In early cases the ureteral kinks are not fixed in position. In order to

avoid fixation and hydronephrosis early diagnosis and treatment are indicated.

3. The slightly movable kidney is the most frequent cause of the failure to recognize ureteral obstruction. It cannot be diagnosed except by special urological methods. We should do more and earlier nephropexies on these cases to avoid permanent alterations in the course of the ureters.

4. With free drainage of the kidneys restored, in some cases with the aid of the indwelling ureteral catheters and lavage of the renal pelvis, the restoration of kidney function is often remarkable. A kidney operation may be averted or a conservative operation serve to establish a cure in an already much improved patient.

Periodic Health Examinations in Preventive Medicine

J. P. MUNROE, M.D., AND E. J. WANNAMAKER, JR., M. D., *Charlotte*

Preventive medicine is new only as regards its indirect application to the individual and the use of newer methods of procedure. We find history recording well devised public health service as early as the sixth century, B. C., and the eminent historian, Gilbert Murray, states that the idea of service to the community was far more deeply noted in the ancient Greeks than in us of today.

With the expansion of our knowledge of bacteriology tremendous strides have been made in sanitation and immunization, public health work representing a most important part of preventive medicine. But another field in the prevention of disease is claiming our attention. No longer does the idea of environment represent the all-important, or at least, the principal factor in the health of the people. We are now beginning to recognize the significance of the individual and the importance of making periodic health examinations, that by correction of defects and regulation of

habits, we may increase his usefulness and lengthen the span of life.

The medical profession formerly has been so occupied with the diagnosis of disease and its treatment that little time has been given to the study of the symptoms of disease in its earliest stages; another reason for this also being that patients did not present themselves for study until driven to the physician by symptoms from diseases well established.

We recognize that the true aim of medicine is the prevention of disease as well as its cure. And to attain this, we must add to the curriculum of diagnosis and treatment the study of disease in its pre-clinical or pre-symptom stage. Then symptoms of oncoming disease may be interpreted and the cause removed before destructive pathological changes have taken place. This is a study in its infancy and our present interpretation of many minor symptoms in relation to the habits of living presented by patients coming in for health examinations is in

many instances scarcely more than a guess as to the exact underlying condition. It is only by studying these cases and following them through from year to year that we can eventually acquire an accuracy in the diagnosis of pre-clinical symptoms similar to that now maintained in the diagnosis of well-established pathology.

It was not until the war, when health examinations were made in great numbers, that even medical authorities realized the enormous percentage of physical defectives among the public. Statistics¹ showed that in the American army draft of men between the ages of 18 and 30 an average of 468 out of every 1000 had noteworthy physical defects and 35 per cent. of these were rejected therefor. The highest single cause for rejection was cardio-vascular defects from which 13 per cent. were incapacitated. This estimate you will remember is taken from a span of only 12 years representing the ages of highest physical development. Estimates of all men examined for military service showed that 4 out of every 100 were rejected because of heart defects and half of these were considered as serious heart disease. This would mean that practically 2,000,000 people in the United States had serious heart disease and twice this number had noteworthy cardiac defects. The above figures are substantiated by insurance statistics which show a rejection of one out of every 50 applicants because of serious heart disease. And statistics from a survey of industrial workers gives about the same percentage. The Life Extension Institute examining adults by the hundreds of thousands find 59 per cent. in need of medical treatment and only one-fifth of this number under treatment. A recent report from the Mayo Clinic² on the examination of 4,000 school children in Rochester and Olmstead County showed preventable and remediable physical or mental defects in 82 per cent of the city children and 73 per cent of the county children.

Thus we see that, aside from the deeper study of pre-clinical or pre-

symptom diagnosis, almost every individual presents gross defects as well as many factors in his routine of life which we, with our present knowledge, know the need of correcting. Whereas the medical profession formerly treated only about 3 per cent. of the population in the United States, this representing those suffering or incapacitated, they might eventually have a clientele of the entire population. Very recently two of the largest life insurance companies signed contracts with the Life Extension Institute of New York which would enable their policy-holders to have free health examinations periodically and in most cases yearly. A striking example of public appreciation of preventive medicine applied to the individual is shown in the field of pediatrics where prevention of disease is already becoming the major part of the pediatrician's work.

Statistics and facts are of value only to the extent that they are understood and profited by, and though a portion of the laity is becoming interested in preventive medicine and periodic health examinations, it is up to the medical profession to see that proper information is disseminated both through the schools and colleges, and to the public direct. What is most needed is education of the public to the benefits to be derived.

In closing, we wish to mention one point with regard to the making of health examinations and advising the patients. The decided majority of those who present themselves for health examinations at the present time and possibly during the next few years, will be people already oversolicitous about their health; and in rendering opinions to them, it is just as important to avoid obscure and indefinite warning as it is that harmful tendencies be corrected. Under no circumstances should statements be made which leave the patient

with any vague doubts for the imagination to magnify. In such cases, infinitely more harm than good may be done. Here again, we may turn to the first rule of the old Greek physician in the

care of a patient, "be sure you do no injury."

1. Robt. Halsey: *Nation's Health*, 1922]
2. Donald C. Mebane: *Amer. J. Pub. Health*, August, 1924.

Local Anesthesia

WM. L. KIBLER, A.B., D.D.S., *Charlotte*

In dental operations, which are so extremely painful, the desire to diminish the sensibility of the teeth is justified; therefore, local anesthesia, either conductive or mucous, by infiltration, has become a common practice in dentistry.

In order to correctly perform such difficult operations as the preparation of cavities and abutments, I find it very necessary to produce paralysis of either the nerve terminals by infiltration, or of the nerve trunk by blocking directly, as in conductive anesthesia.

Novocain solutions, varying from .5 to 2 per cent, are recommended for dental purposes; 1 or 1.5 per cent being the most popular. I always use the 2 per cent solution, except in cases of anemic and hysterical patients. In these more or less serious toxic effect can be avoided by reducing the percentage of solution, also the quantity.

The temperature of the solution should correspond, as nearly as possible, to that of the body. Any deviation from this practice will produce irritation, and, possibly, serious tissue lesions.

Too much stress can never be laid upon the sterility of the solution used in this work. Of course, we have to take for granted that the tablets are reasonably sterile. As for the preparation of the solution, nothing should be taken for granted; but, on the contrary, be sure your prepared solution is sterile to the letter. The only way to accomplish this is to do it yourself, unless you have some one trained in this line. For the past several months I have been distilling the water every day, making up a fresh Ringer solution every morning. This may not seem necessary to some,

but I find it very little trouble, and then I am not worried about the consequences. The point of injection must be made thoroughly aseptic before the needle is inserted. This is done by the use of equal parts of iodine and aconite, after thoroughly drying with cotton or gauze.

In order to meet with success it is not only important to carry out, in detail, the steps above mentioned, but a fair knowledge of the anatomy of the face is essential.

In the anterior surface of the maxilla are two very important and large foramina, (the infra-orbital), above the root of the first bicuspid. Through these foramina pass the nerves to the infra-orbital region of the facial surface of the maxilla, giving off numerous branches in their course, viz, the anterior superior dental branch, which supplies the upper incisors and canines; the posterior superior dental branch, which supplies the molars; while the bicuspid are supplied by both the anterior and middle superior dental branches.

The palatal surface of the maxilla is divided into two sections; anterior and posterior. The posterior is supplied by the anterior palatine nerve, which passes to the hard palate by the posterior palatine foramen, situated above the third molar. This nerve supplies the molars, and sometimes the bicuspid. The anterior teeth, including the bicuspid, are supplied by the naso-palatine nerve.

In order to anesthetize the three molars, the injection is made at the inferior border of the maxillary tuberosity. Have the patient relax the muscles, and throw the mandible to same side which

injection is to be made. This gives the half open mouth, and with the use of the mirror, the cheek is lifted, which gives free access to the area of injection.

The border of the zygomatic process is located, and the needle inserted high up in the mucous membrane somewhat away from the bone. The needle is then advanced slightly backward and upward, depositing about one c.c. of the solution. In order to anesthetize the anterior teeth, I do not find it necessary to make the infra-orbital injection, but prefer infiltration, owing to the cancellous structure of the maxilla. The point for infra-orbital injection, however, is at the infra-orbital foramen located just below the lower border of the orbit, almost exactly above the first bicuspid. Not more than 1 c.c. is advisable here.

In blocking the six anterior teeth by means of the infiltration method, the first insertion of the needle is made at the side of frenum, above and between the roots of the central incisors; the needle is then advanced distally and laterally beneath the periosteum until it reaches the canine fossa near the apex of the canine tooth. After this has been done, retract the needle and follow the same technic on the opposite side. This can be done by one insertion of the needle. Also deposit a small amount of the solution at the apex of the cuspid on both sides of the arch.

Should extraction be desired two methods of lingual injections are practiced. 1st. Injection at the anterior platine foramen in order to block the right and left naso-palatine nerve. This foramen is located in the median line just lingual to the central incisors, and is formed by the articulation of the superior maxillary bones. 2nd. An injection at the lingual apex of the cuspid on both sides. I do not make the anterior palatine injection, as the pain is very severe, due to the hypersensitiveness of this area, but prefer injection behind each tooth as advocated by Fischer. For preparation of cavities and abutments any lingual injection

made is entirely unnecessary.

As regards the mandible, we should take into consideration the density of the bone. It not being of a cancellous structure, mucous anaesthesia is contra-indicated. Perhaps loose roots, and sometimes the anterior teeth may be removed, but the only sure method is to resort to blocking the main nerve trunk.

There are four important foramina, viz, two inferior dental, one on each side; and two mental, one on each side. The inferior dental is situated in the internal surface of the ascending ramus, and contains the inferior dental nerve and inferior dental artery passing forward within the dental canal in the mandible as far as the mental foramen, where the nerve divides into two terminal branches, incisor and mental.

The technic of injection is the same, although the mandible varies in size and shape in different individuals. The most important landmarks for this injection are the ascending ramus, internal and external oblique lines, and the retromolar triangle. At the retromolar triangle is a mucous fold. This is the point for injection. The needle is advanced horizontally and posteriorly along the inner surface of the ascending ramus. Do not pass the needle too far back else you will go beyond the foramen, and thereby fail to produce anesthesia. The solution should be discharged very slowly, beginning immediately after insertion of the needle. The loose connective tissue at the point of insertion renders the puncture practically painless. About 2 or 2.5 c.c. is deposited in the pterygomandibular space.

The best indication of anesthesia is a slight tingling in the lip and tongue on the injection side, about three minutes after injection.

In extracting the buccinator nerve is blocked by a few drops inserted in the cheek.

For preparation of cavities and abutments, I do not make the buccal or labial injections.

Last, but not least, I wish to emphasize the precautions necessary while

operating under block anaesthesia. Of course the tooth is blocked, as far as pain is concerned; but in the grinding and shaping for bridge work the heat generated from a rapidly revolving stone held too long in one position, may, in all probability, cause the death of the pulp.

Care must be taken in cavity preparation, especially for young patients. The best of us will expose a pulp occasionally, even when no anesthetic is used. So you

can readily imagine how easy it would be to expose a pulp under block anaesthesia.

In closing I wish to say that this modern method for the alleviation of pain is at the service of every dentist, and when properly used lessens the sufferings of humanity; therefore, every dentist should take advantage of it, thereby elevating the dental profession in the eyes of the public.

Goitre*

W. MARVIN SCRUGGS, B.S., M.D., F.A.C.S., *Charlotte*

It is not the purpose of this paper to present any original findings with regard to the thyroid, but the wide dissemination of information on this most important subject and the changing attitude of our thyroid patients, prompts me to direct your attention to the advanced knowledge of thyroid disease and present for your consideration something of the cause, prophylaxis and treatment of thyroid cases from the viewpoint of the surgeon. The literature during recent years has abounded with information on thyroid investigation, and in my opinion there has been more progress in the last decade in the understanding of thyroid disease, its pathology and treatment than in any other medical subject of equal interest or importance, and these painstaking investigations have been fruitful in that they have given a clearer insight into the changes taking place in the gland, have permitted of an accepted clinical classification of the different types of goitre, demonstrated that certain types of goitre may be prevented, and as a result we now have a fairly well standardized and very promising method of handling these cases, be the indication medical or surgical.

The present advanced status of thyroid therapy is due largely to the valu-

able contributions made by American internists and surgeons, especially the work of Crile and the Mayo clinic, which is now duplicated by competent surgeons all over the country, and has served to place the management of thyroid cases upon a plane to which we can point with pride.

In addition to these advances, one of the most important steps has been the efforts directed toward the prevention of simple goitre, and with our present knowledge of the function of the thyroid we can readily appreciate the statement of Marine, "Simple goitre is one of the easiest known diseases to prevent." With this statement in mind, it behooves us as medical men to familiarize ourselves with the physiologic and chemical conditions underlying the prevention of goitre, especially of the adolescent type.

We are all aware that simple goitre may appear sporadically in any locality, but it is also especially associated with certain regions or districts, and in that portion of the United States along the great lakes, and the Pacific Northwest the incidence of goitre is very high. This being true, Marine and Lenhart were prompted to pursue their investigations, and demonstrated the very definite relation of the iodine content of the thyroid to the cellular hyperplasia and glandular hypertrophy, Bauman in 1895 having first recognized that the active prin-

*Read before the Medical Society of the State of North Carolina, April, 1924.

ciple of the thyroid was a very stable compound of iodine, the percentage of iodine present in the individual thyroid being variable, but there is a quite constant minimum percentage which is necessary for the maintenance of normal or colloid gland structure, and that if the iodine content falls below 0.1 per cent active hyperplasia begins.

With this knowledge, and the frequency with which goitre develops in adolescence, the first application of this principle of goitre prevention was instituted in the public schools of Akron, Ohio, in 1916. A careful examination of the thyroid of each girl from the 5th to 12th grade was made and recorded once each year. In the first examination 56 per cent of these girls were found to have enlarged thyroids. The mode of prevention used was the administration of 3 grs. of sodium iodide in the drinking water once each day for two weeks, each spring and fall, permission from the parents or guardian being necessary to allow the girl to take the dose. Of those taking the prophylactic dose, not a single girl developed thyroid enlargement or goitre. Among those not taking iodine as a preventive, 27.6 per cent of those without goitre in the beginning developed goitre. The goitre disappeared in over 60 per cent of the girls with goitre at first, and who took the prophylactic dose of iodine, and among those who had goitre at first, and did not take iodine, the enlargement **disappeared in very few**. This method has been employed in other goitre districts, and from these experiences, and from our observations in our own practice, we believe that if the cases seen during adolescence are kept saturated with iodine, goitre will not develop.

In the consideration of the hyperplastic changes involving the thyroid I know of no term that is more confusing than the term goitre, and Plummer after the study of thousands of cases has done much to eliminate confusion by giving us a simple classification, based on sound pathological basis, and it is the proper recognition of the different types of goitre that is more important to the general practitioner than the type of

treatment. In the succeeding discussion based on the pathology described and the physiological changes observed, the following types of goitre will be considered:

1. Colloid.
2. Adenomatous.
3. Exophthalmic.

1. Colloid goitre is distinctly a goitre of youth, is seen most frequently in individuals between the ages of 18 and 25, and rarely in persons over 30. It is in this type that we have an increase in intra-alveolar colloid, the acini being dilated and filled with colloid material. This type of goitre produces a more or less uniform enlargement of the thyroid gland, including the isthmus, and on palpation may impart a distinct granular sensation to the examining finger. In this type of goitre the individual is often nervous, may have a rapid pulse, and often partakes of many of the characteristic signs and symptoms of a true exophthalmic goitre. As suggested by Sistrunk, these cases may be differentiated by the metabolic rate, which is normal, or may be slightly below normal, and usually produces no symptoms other than anxiety or worry over the presence of the enlargement. These cases are not usually to be classed among those demanding surgical intervention. Their treatment consists of a frank explanation to the patient of her condition, elimination of possible sources of worry and anxiety, the administration of iodine (or thyroxine), and watchful waiting. If they do not tend to improve it is possible that we are dealing with a mixed type. The use of the x-ray in this type of case is a hazardous performance and in my experience only tends to stimulate these glands to greater activity; and certainly no conscientious surgeon should operate on them at this stage.

2. Adenomatous.

By far the commonest type of goitre that we have to consider in this section of the country is the adenomatous, the enlargement being due to the growth within the gland of adenomas. It is this type of gland that rarely produces toxic

symptoms in the early stages, but Plummer has found that 23 per cent of these cases later produce toxic symptoms; usually after the goitre has been present for many years. When toxic symptoms do appear in this type of enlargement, the metabolic rate is increased, but not attaining the high rate manifested by the exophthalmic type, the mild, long continued hyperthyroidism of the adenomatous type affecting the cardio vascular system, whereas the nervous system suffers more profoundly in the exophthalmic type. This goitre assumes oftentimes enormous size, and is readily recognized by its irregular appearance, the thyroid being asymmetrical, and on palpation may be nodular, very hard, or cystic, depending on the degree of degeneration that the gland has undergone.

The treatment of adenomatous goitre in most instances is surgical, depending largely on the age of the patient, size of the gland, and relative degree of toxicity. There is a feeling among some surgeons that these cases are best not operated on early, unless giving troublesome pressure symptoms or symptoms of increasing toxemia are manifest. However, I usually advise operation if the adenomas are of much size, for it seems better surgery to advise removal before they have attained great size, and in addition they run the additional risk of developing toxic symptoms later of not removed. When properly operated, and sufficient diseased gland removed, these cases usually secure immediate and lasting improvement.

3. Exophthalmic.

In the exophthalmic type of goitre we have to deal with a hyperplastic growth of the epithelial cells, which is usually general throughout the gland, usually causing a marked enlargement of the gland, while in other cases it may not be particularly enlarged, and is usually not nodular. This type of goitre is most frequently encountered during the third and fourth decades, but may be seen at most any age. The symptoms may appear very acutely, or develop very insidiously, but present a clinical syndrome with which we are all familiar,

and I regret time does not permit of an elaboration of the clinical picture presented by these cases. As a rule the symptoms, such as nervousness, tachycardia, tremor, loss of weight and strength are indicative of the onset of **hyperthyroidism**, and are even present at times before there is any noticeable enlargement of the thyroid. Many of these cases will develop a rapidly forming thyrotoxicosis, and present the picture now known as "**thyroid crisis.**" Most cases, under proper treatment, will tide over the initial crisis, and pass into a period of improvement, but unless proper intervention has been instituted this crisis will recur, often with disastrous results, or at the best terminate in chronic invalidism.

This condition is only easily recognized by the presence of the classical symptoms, and of an enlarged gland, (the enlargement usually affecting the gland symmetrically), and an increased metabolic rate. In this connection, I want to say just a word about the importance of basal metabolism determination, with reference to the diagnosis and treatment of thyroid diseases. This test offers a fairly reliable gauge for treatment, helps to determine the progress of the case, and oftentimes diagnoses the doubtful case; but I want to warn against depending too much on the laboratory findings, for, if we do, we are going to miss the clinical side of the picture which is often more important, and a most helpful guide as to method of treatment.

The treatment of exophthalmic goitre is one that has evoked much discussion, and does call for discriminating judgment, as it may be medical or surgical or both, but I am convinced that in most cases best results are obtained through surgery. In cases that are seen early, before any of the vital organs have become damaged, operation may be performed with relative safety. Acutely ill cases are dangerous surgical risks, and it is often necessary to tide them over for a while by rest and careful nursing, or when the condition had existed till vital organs are damaged, preliminary ligations of the thyroid arteries

will be indicated, often gives a brilliant result, and in many cases offers a splendid index as to reaction to be expected from the more formidable operation of removal.

These cases should always be subjected to careful examination and study, and if this is done, and proper time for operation selected surgery offers a very promising outlook for the patient, but should be done as early as possible, for while operation stops hyperthyroidism it cannot repair the damage already done to the vital organs. The clinical study of the case will make clear the indication whether they be surgical or medical, or x-ray.

There are certain cases which always require operative intervention, irrespective of what our opinion may be as to the desirability of goitre operation in general, and from my standpoint the most important thing for me to know is whether the goitre is non-toxic, or toxic. The former requires little or no preparation, in the latter an adequate preparation may mean the difference between success and failure. The operation itself when properly done is almost free from danger in most instances, in fact, is one of the safest and most satisfactory of all major operations. We should determine our mode of operation, or the

procedure to be followed, by a consideration of all the signs and symptoms taken together, and not be too strongly influenced by any one thing.

Absolute rest in bed, freedom from worry or fear, plus securing the patient's confidence, often is sufficient; but when the symptoms are severe it is necessary to resort to more energetic measures, and the application of ice to the throat and chest, plus mild sedatives has been very useful in my hands.

There is still controversy over the best means of inducing anesthesia in operation for goitre, and one is best guided by the individual case. More than fifty per cent of my cases were operated under local anesthesia, preceded by morphia, but there is no doubt that in certain cases general anesthesia adds much to the facility of operating, and to the ease of mind of the patient. Hemorrhage must be controlled adequately, injury to the nerve avoided, and the operation done as quickly and smoothly as possible so as to spare the patient as much as possible, taking care to remove enough tissue, and this is better accomplished by removing some of both lobes, not only for cosmetic reasons, but also to avoid leaving diseased tissue in toxic cases.

"Entering Inaccessible Veins."

Dr. M. E. Lowell, of Pittsburgh, writing in the February number of the *Journal of Intravenous Therapy*, outlines his method of entering seemingly inaccessible veins. He says:

"In such an arm, my method is as follows:

"After allowing the patient's arm to hang over the side of the bed, thus bringing about as much venous congestion as possible, I apply the tourniquet very tightly. This procedure imprisons the maximum amount of blood in the veins of the arm to be used. I then grasp the patient's hand with my left hand and tightly encircle the patient's

wrist with the fingers of my right hand. By sliding the right hand down the patient's arm while still maintaining the grasp, the blood in the veins of the lower arm will be milked into the cubitals causing them to distend and either become visible or at least palpable, making the introduction of the needle relatively easy.

I have also found this method very useful in cases which call for immediate stimulation of the cardio-vascular system by the intravenous method, but in which the venous pressure is so low as to make entrance into the veins almost impossible by the usual procedure."

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usable medical knowledge.*

The Benefit of the Doubt.

How frequently do we hear the expression "The patient should be given the benefit of the doubt." Of course he should; therefore, those who use it are in the position of asserting more or less importantly what no one denies. The very statement of a self-evident proposition suggests that the proponent is on the defensive. As usual much hangs on definitions, which makes it necessary that we agree on what is a benefit and what a doubt. Possibly some aid may be had from approaching the subject indirectly and stating what a benefit is not. All will agree that depriving a patient of money or hope, disrupting his social and business career, or jeopardizing his life, is not a benefit *per se*. In themselves, these are **malefits**, if we may be allowed to coin a word from perfectly good metals. Of course, in many instances they are offset by consequent benefits, but that does not alter their intrinsic status. And the probabilities of the one outweighing the other brings **doubts** to the fore.

When a patient has been examined patiently, and painstakingly by all the accredited means, for determining the cause of a slight loss of weight, a once-in-a-while cough and a moderate im-

pairment of his usual energy, without revealing any definite symptoms; is telling that patient that he has tuberculosis (even if the adjective **inactive** is added) giving the patient the benefit of the doubt?

When a child fails to weigh as much as somebody's weight curve says a normal child of his age should weigh, has a "cold" now and then, is peevish, wets the bed, and even shows tonsils larger than the average for his age; in the absence of direct evidence of pathology in these organs, is tonsillectomy giving the patient the benefit of the doubt?

When a middle-aged man is found to have an abnormally high arterial tension, a bit of albuminuria and cylinduria, and some joint or muscle pains, even with a report of "shadows" and "light areas" not corresponding exactly with an assumed "normal" in the alveolar arches or in the region of one or more of the nasal accessory sinuses; is depriving him of his teeth and reaming out his sinuses giving the patient the benefit of the doubt?

When a young woman has severe headaches or backaches, one or both, with the onset of each menstruation; is a dilatation and curettage, with or without the throwing in of an appendectomy and ablation or puncture of one or both ovaries giving the patient the benefit of the doubt?

When a patient of either sex complains of symptoms which are commonly grouped under the name, **indigestion**, and fails to reveal to inquisitive eyes, including those of the Roentgen-ray, any objective evidences showing probable cause, even though the lumen of the appendix appear to be unoccluded; is removal of the appendix giving the patient the benefit of the doubt?

When a patient has a well-developed cancer of the uterus, breast or stomach, and can be made comfortable with opiates, is a surgical operation giving the patient the benefit of the doubt.

When, in the course of a general or special examination, the Wassermann reaction is found to be positive, in the absence of other evidences of syphilis;

is making a positive diagnosis and instituting treatment giving the patient the benefit of the doubt?

Is ordering the discontinuance of the keeping of late hours or of smoking cigarettes, merely because we can find no explanation of symptoms complained of and with a vague idea of **doing something** giving the patient the benefit of the doubt?

To all these questions we answer: We think not.

The problem of arriving at a diagnosis is one of many intricacies and complexities. That of management often involves equally as many. No one who has had the responsibility of advising many of his ailing fellow-men would lightly belittle the tasks or impugn the motives of his fellow-doctors. It does seem, though, that some factors requisite for the solution of the problem of the best interests of the patient are frequently either not given their proper value or left out of the reckoning entirely.

Consider what it means to a patient to be told that he has tuberculosis! He is usually a young man. At best, it means that he must make great changes in his plan of life, often that he must spend large sums of money on himself which are needed in other such urgent causes as the support of his family and the education of his children. If he happen to be unmarried, the probability is he will never be; if not yet a man, the chance of ever leading a normal life is remote indeed.

The indiscriminate taking out of tonsils is a far less serious matter; but this is not as innocent a procedure as some would have us believe and should be done only **for cause**.

Taking from a man his teeth is a real deprivation; and in sinus operations there is real danger to life. Then it by no means follows that relief will ensue immediately or mediately on one, two, three or a dozen repetitions of the surgical procedure. Further, attention of the patient is focused on treatment given in the operating room, which tends to make him neglectful of the less

pyrotechnic but often more useful medical measures.

There are few careful observers who report anything approaching satisfactory results from dilating and curetting for the relief of any kind of discomfort which comes and goes with changes of the moon, and undoubtedly a number of women have been and are being made permanently barren thereby.

It is difficult to get a conception of the **modus operandi** by which an appendix with a few round cells more or less than are found in the average of appendices removed as a routine in the course of abdominal operations could cause eructations of gas, constipation, distress soon after eating, or dreams of an unpleasant nature. It would seem that, could the relatively inconsequential (so far as appearance goes) pathology in the "chronic appendix" cause so much discomfort, a spleen enlarged to twice its natural size or a stone in the gall-bladder would make it impossible for a man to take food at all.

When cancer is evidently cancer, with metastases and cachexia, is there any longer any possibility of doubt as to who can be the only one to gain benefit from a surgical operation? Surely most will agree that the chance of prolonging existence,—for it is not usually life—, is at least counterbalanced by those of either death in the next few days, or the shortening of the span by hemorrhage and the indefinite starvation period.

A verdict of syphilis is fraught with as serious consequences as most of those handed down in courts of law, as the sentence is usually for life. The victim may hope to be paroled but the chance of ever being free is not within the range of probability. This much is certain, and there may be other immediate disasters including suicide, loss of position, or breaking up of the family. And all these are far more apt to come in the train of an incorrect diagnosis, the man who really has the disease having often been suspected by his wife and less intimate associates. The diagnosis, having been anticipated, is robbed of its news value and creates no commotion

when it is pronounced.

Although we may be enthusiastic savers of daylight and have never dallied with Lady Nicotine, it does not necessarily follow that different habits are injurious habits. Some of us have never gotten away from the puritanical teaching that all agreeable and pleasant habits are sinful and will surely bring punishment in their wake.

Chauncey Depew is said to have once paid a tribute to the Pilgrim Mothers, closing with the words, "besides sharing all the hardships of the Pilgrim Fathers they nobly bore an even greater one, that of putting up with the Pilgrim Fathers themselves." Tobacco, tea, coffee,—and even other things which it is no longer lawful to mention,—have done much to gladden the heart of man. They may not add years to his life: they will add life to his years. In some of them there is balm for his wounds and surcease for his cares.

It may be safely said that doctors do not safeguard the pecuniary interests of their patients as they should. This applies to such matters as choice of hospital room, length of stay in hospital, and engaging and retaining nurses, as well as to method of treatment decided on. The chances are that a man will say "yes" when asked if he "wants the best" for his wife or child, assuming that without this his dear one would have a lesser chance of recovery. In interpreting this assent **best** is taken to mean **most expensive**, although the two are by no means synonymous.

Some grandiloquently ask, "what are a few dollars compared with a human life?", and look about as if to say "that is unanswerable." In the first place, usually more than a "few" dollars are involved; in the second, we have no means of knowing that either the life would be lost were not the dollars spent, or that their expenditure would save or prolong it. Do not affect to despise dollars,—even somebody else's dollars. They do save lives, homes and self-respect.

Finally, it all comes back to a thing, easy to say and hard to do, old as the hills and new as a fresh-cut tooth; put

yourself in his place. In arriving at and pronouncing a diagnosis,—which is often a verdict carrying a life sentence —, think of yourself as the one in the dock; then after careful, honest study of the case from every aspect; pathologic, economic, pecuniary, domestic, sociologic; remember that there is a good old Scotch verdict of "not proven"; that you can say "I do not know;" that you can give a tentative diagnosis while attempting the working out of a real one; and that the probably innocent are entitled to far more consideration than the probably guilty.

Free Discussion, Pro and Con.

"Truth wears no masks; bows at no human shrine; seeks neither praise nor applause: she only asks a hearing."

"The Unwritten Law."

The unwritten law protecting the homes of men is established.

There is an unwritten law, not established and not always followed. It is this: that the professional man transgresses no law of either right or morals if he smother the hopeless monstrosity at birth.

Rubin, and his gas tank apparatus, for establishing the patency of the Fallopian tubes, is such a monstrosity, and stands a menace to the life of every woman in our land.

Be a woman just a minute, will you? Have a rough hand pry open the vagina; expose and force a "canula" through the cervix, into the cavity of the uterus; fill this cavity with gas and increase the pressure from without until you have "colicky pain" and "cramps," telling you that the gas has been forced into the abdominal cavity.

Think of it! the aggression, the trauma, the forcing a foreign element into the abdominal cavity, with its unavoidable dangers to cellular tissues, and all surrounding structures: that is not gynaecology, but mechanics, criminal and commercial mechanics, devised to attract the unthinking man, and exploited for profit.

Teaching, teaching truth, is the greatest thing in the world, and the only things that lives. To conceive and portray vividly, a thing that can be done by all men, with comfort and safety to the patient. The fault of today is not with the pupil; his line of thought, and work are in keeping with his instruction; and a tribute of courtesy and of loyalty to the men who gave it; but it is with the men who are made teachers, with nothing to teach, and no conception of the fact that teaching means truth, in all of its beauty and simplicity; and is the only thing really that counts.

H. S. Lott, M.D.

508 Masonic Temple,
Winston-Salem.

In our first editorial utterance we announced: "Criticism will be welcomed and given earnest consideration; the pointing out of faults being regarded as far more valuable than indiscriminate praise." It is gratifying to be taken at our word.

One of the censures to which our medical societies are most justly amenable is that of discussing essays favorably only, and this short-coming is far more general in the south than in other sections of this country. Another, and related, one is tolerating the nuisance who carefully posts himself near the front and demands recognition after every paper, even if only to say "I can not add anything to what the doctor has said," and then proceeds, at length and weariness, to prove that he can not. In neither of these ways is Truth served.

Several years ago one of the most brilliant medical men in the state, in a conversation with the writer, pointed out this practice as one of the great deterrents to our progress. He said that, instead of rising and making the usual speech beginning with, "I have greatly enjoyed the doctor's paper," and winding up with, "The doctor is to be congratulated on his masterful presentation of this important subject, and the society is to be congratulated on having been privileged to listen to it," many should be allowed to fall to the ground of their own inertia, and sometimes it

would be entirely justifiable to ask "why should the time of the society be taken up with such drivel?"

Possibly this is an extreme statement; but some action along that line would be in order. In other sections it is the exception for a paper which contains anything of consequence to meet with the approbation of the entire meeting, or to fail to elicit some adverse criticism. This action does not imply hostility to the essayist. It is meant in good spirit, and usually taken as meant, the members being engaged in a sincere effort to teach and learn the facts, and fully realizing that facts are entirely impersonal.

So long as we pat each other on the back, irrespective of the worth of our efforts, just so long will we labor under the necessity of playing second (third or fourth) fiddle to the sections in which more rational procedure is in vogue.

Dr. Lott's letter is very welcome. He is a thoroughly honest and capable man, very much in earnest. He expresses himself vigorously, using no "weasel words." His meaning is unmistakable.

On the other hand, the essayists contributing the articles advocating the diagnostic procedure under discussion are also persons of repute. And they seem to make out a case for the method.

We hope to have enough discussion to fill an "Open Forum." So long as motives are not questioned and abuse is abstained from, opinions can be expressed up to the point of requiring asbestos wrappers.

The League of Nations News Bureau.

Bulletin No. 1 of this news bureau has come to my desk. The subject with which it deals is the standardization of serums.

"The Health Committee of the League of Nations, in a report to be filed with the Council of the League of the League, a copy of which has just reached this country, announces the plans of the Committee for the standardization of anti-toxins and serums. Last year

agreement was reached on the question of the standardization of antitoxin for diphtheria and it is expected that during the present year the tetanus serum will be standardized. The researches on the serodiagnosis of blood disease will also be further carried on during the present year. Similar attempts for the standardization of serums are being carried on in other branches of practical medicine, notably with regard to the use of insulin. The value of the standardization of serums and anti-toxin to physicians lies in the fact that in the future the medical authorities of different nations will have at their disposal the medical knowledge, practice, and literature of all countries. In the past the hospital statistics of London, Berlin and Paris have been of little use to the American practitioner as every country has a different kind of serum."

Some say the League of Nations is dead. It is commonly reported that in November, 1920, opinion was shown by the votes of the people of the United States to be overwhelmingly opposed to the League. Both of these statements are wide of the mark. Its activities are many and varied,—all the way from settling the Silesian boundary question to making the serums used in widely separated nations agree in efficacy. It is working to save human life, by preventing wholesale slaughter on the battlefield, and by aiding in the much less spectacular, but equally as useful, endeavor to prevent death from disease in the home of prince and peasant. Organized to prevent war between men; it makes war on the common enemy of mankind. It should be obvious to medical men the world over that the movement dealt with in Bulletin No. 1, is deserving of the fullest support.

Now about the verdict rendered at the polls in 1920. That it was against the Democratic Party there can be no doubt; that it was against the League of Nations is by no means certain. Such a conclusion is not borne out by the

evidence. That issue was not at all clearly drawn. It seems to be forgotten that some of the foremost men of our Nation campaigning for the Republican Party, among them our present honored Chief Justice of the Supreme Court, assured us that the quickest and surest method by which entrance into the League could be gained would be by the election of the Republican ticket. They were honestly of the opinion which they expressed and are no doubt still active in the good works of the League. It is not dead; it does not even sleep; it is alive and working energetically in the best interests of all of us, including its most virulent enemies. It is to be noted that the next serum to be taken up is that of lockjaw. One can not but speculate that a proper quantity of the toxins against which this is aimed, judiciously distributed in high places, might have resulted in wiser decision as to our relation to the League of Nations.

The Department of Laboratories.

"Take interest, I implore you, in those sacred dwelling which one designates by the expressive term: Laboratories. Demand that they be multiplied, that they be adorned: these are the temples of the future—temples of well-being and of happiness. There it is that humanity grows greater, stronger, better."—*Louis Pasteur*.

Could a greater claim be made for any institution of man? Or one more just? And who could have spoken with as much authority as the great Pasteur? He calls attention to the expressiveness of the term. He was not one of those who despise words, for with him they were really signs of ideas. The word which he was discussing was originally written "Elaboratory." It seems somewhat regrettable that it has not retained its old form, since even to the dull-witted, at least a part of its meaning is obvious at a glance. As might have been anticipated from a knowledge of the general tendency to slovenliness in thought and speech, the meaning of even so clear and direct a word as "elaborate" has become somewhat blurred and frequently conveys some such idea as "ex-

tensive" or "lengthy"; but to those entitled to lay claim to so much as the rudiments of a liberal education, it must stand out as meaning "worked out." And the medical laboratory men of our own time are daily working out the tedious and necessary details of our problems of diagnosis and treatment, often for little reward in honor or money.

The laboratory man is entitled to rank on equal terms with the chiefs of the clinical branches; the Department of Laboratories in this journal will be conducted in such a way as to illustrate this from month to month.

The Evolution of a Specialty.

In this issue the Editor of the Department of Urology lays the foundation for the discussion of the rise and progress of this important specialty. In view of its scope, the number of able men engaged in its practice, and its immeasurable benefits to the race, it seems well-nigh incredible that it could have grown up in half a life-time. But this it has done.

Dr. Crowell was one of the accouchers at its birth; he had much to do with nursing it through its teething period, working out its problems through callow youth, and finally bring-

ing it to a vigorous, triumphant maturity.

This qualifies him to speak with authority.

Announcement

The Ninth Annual Clinical Session of the American Congress on Internal Medicine will be held in Washington, D. C., March 9-14, 1925.

Washington clinicians and investigators of attainment will devote the entire session to amphitheatre and group clinics, ward "rounds," laboratory conferences, lectures, demonstrations of special apparatus and methods, and the exhibition of unusual scientific collections. Civilian and governmental services are united in the aim to make the week useful and memorable.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Address enquiries to the Secretary-General.

Wm. Gerry Morgan, Pres.,

Washington, D. C.

Frank Smithies, Sec'y-Gen'l,

1002 N. Dearborn St.,

Chicago, Ill.

Essentials of a Common Disease Pulmonary Tuberculosis

J. DONNELLY, M.D., Charlotte

The death rate from tuberculosis has been decreasing for some several years, but, in spite of that fact, it is still sufficiently high to warrant bringing every effort to bear in order to accomplish its further reduction. During the years 1913-1923, 36,302 deaths from the disease occurred in North Carolina, the number in the year 1923 being 2345. Since there are approximately nine active cases for every one death, there

were, consequently, in the state in the year 1923, 21,105 persons afflicted with the disease, probably the greater number of these being unrecognized.

Although the deaths from heart and kidney conditions usually exceed those from tuberculosis, the reduction in the number of deaths from the latter disease is far more important, particularly from an economic standpoint, because of the fact that the greater pro-

portion of these deaths occur between the ages of 20-40 years, when the individual's wage-earning and productive power should be at its highest point. In addition to this, tuberculosis is a slow going disease, three years being the average length of disability before death, which term of disability generally causes an enormous drain on the financial resources of both the patient and his family.

Probably the greatest future work in the reduction of the mortality and morbidity of this dread disease will be accomplished, not so much in the treatment and eventual returning to his position in society, if possible, of the recognized active case, but along the line of preventive medicine. However, recognition of these active cases will still be most important, not only for the purpose of treatment, but also for the additional purpose of locating them, and causing the adoption of the proper procedure for the protection and the prevention of infection of others. Very many active cases of tuberculosis, particularly of the low-grade, chronic type, go along for years with many more or less indefinite symptoms, and also without recognition, of the cause of the trouble. These cases are almost continuously a menace to the otherwise healthy individual and, especially, to the child.

The great majority of the cases of active tuberculosis will necessarily fall into the hands of the general practitioner, and it is upon his shoulders that the greater part of the responsibility for the diagnosis of these cases will rest. Naturally, the general practitioner has such a variety of cases to look after that he is not able to give the time, which a thorough examination of the lungs requires, to each case. For that reason and for the safety of all concerned, it is well for him to bear in mind certain symptoms and signs which may frequently point to an active lung condition. At least, the presence of any of these symptoms, without an apparent or known cause, should indicate the necessity for a more painstaking examination of the lungs.

The following is a more or less complete list of the symptoms, as near as possible in the order of their importance. A history of the occurrence of any or all of these symptoms should indicate the possibility of an active tubercular infection, and should call for a rather more careful investigation than might otherwise be deemed necessary.

1. *Hemoptysis*. The coughing of blood in any degree. Expectoration of blood in by far the greater majority of cases is indicative of a pulmonary tubercular infection.

2. *Phuerisy* (either fibrinous or with effusion). The great proportion of pleural inflammations are probably tubercular in origin.

3. *Cough*. This symptom in pulmonary tuberculosis is more or less variable, but in the majority of cases is present to some degree. Any cough which lasts longer than a period of three to four weeks should require further careful investigation.

4. A frequent afternoon rise of temperature, however slight, above the normal, with a possible sub-normal morning record.

4. A more or less progressive, even though very gradual, loss of weight.

6. Frequent "colds." Very often the symptoms classed as the ordinary "cold" are definite manifestations of an active tubercular infection. Furthermore, the reduction in physical resistance induced by a tubercular infection causes one to contract "colds" more readily than would otherwise be the case.

7. A disordered digestion with loss of appetite. "Stomach trouble." One of the first symptoms of tubercular disease is a fickle or disordered digestion. Along with these digestive disturbances there may be, and usually is, a chronic constipation, unless there happens to be a tubercular intestinal involvement.

8. Lassitude. A feeling of weariness on slight, or, frequently, no exertion. This symptom is one of the first indications of the absorption of toxins produced by the tubercle bacillus.

There are, probably, the more impor-

tant symptoms which may point to a beginning, or, often, a more or less well advanced active tubercular process. At any rate, a case presenting one or more of this train of symptoms, without other known cause, should be rather carefully gone over for the purpose, if possible, of eliminating, if not positively diagnosing, tubercular disease. There is no apparent reason for the death rate from tuberculosis, (a disease which is certainly the most wide-spread of all and which is certainly preventable), being as high even as it now is, provided that a most careful effort is made to locate and treat the cases afflicted with it.

It is now a generally accepted theory that every one of us, at some time in his life, has been infected by the tubercle bacillus. This does not mean, necessarily, disease; but, because of this possibility of wide-spread infection, it is well to bear one fact in mind. Keeping the activity of a tubercular process in abeyance is entirely a question of physi-

cal resistance. Consequently, if this resistance of the body is materially reduced through any cause, viz, overwork, lack of food, poor hygienic surroundings, some other intercurrent disease, carelessness in regard to the ordinary rules of health, etc., a re-activation of a quiescent tuberculous lesion is the very easiest thing that can occur. Furthermore, the sooner this re-activation is recognized, the better chance the afflicted one has to obtain an arrest of the process, and the less risk there may be of the production of a more or less massive infection in an otherwise healthy contact.

In conclusion, I should like to lay particular stress on the point that a patient, who has been positively diagnosed as tuberculous, should understand fully the nature of his disease. It is practically impossible to obtain the necessary co-operation, either in treatment or in the protection of other individuals, unless the afflicted one understands the full seriousness of his trouble, and the rules which must be followed.

DEPARTMENTS

Pediatrics

FRANK HOWARD RICHARDSON, M.D., *Editor*
Brooklyn, N. Y. and Black Mountain, N. C.

How far should the physician go in bringing to the public what he has to offer? A few years ago this question would have been answered practically unanimously by the medical profession. And the sense of this unanimous answer would have been that he should do nothing whatsoever along this line. Let the quack, the charlatan, the cultist, advertise as he would, the medical profession should maintain a dignified aloofness from any and all propaganda, letting the public come to its members if they wanted to, or stay away if they did not choose to come.

It seems a far cry from this attitude to that now taken by one of the most powerful and progressive county medical societies of the country, which has

recently gone to the greatest lengths first, to get its members to realize just what is implied by the term, "periodic health examination," and second, to bring to its lay public the fact that its personnel were qualified to give such an examination, and that every one in the community should avail himself of this service once a year. A great welfare organization in this community has been enlisted in the campaign; the health department has co-operated; the public health committee of the county society has brought speakers to talk to its members on the subject, and has induced a hundred of its members to study such examination-making by means of the most practical method in their power, namely, by submitting themselves to the gentle ministrations of other volunteers in the profession, and being them-

selves given sample health examinations.

And has this action on the part of the above-mentioned county medical society brought forth universal condemnation on the part of their more conservative confreres the country over? Quite the contrary. Their action has been hailed far and wide as a most statesmanlike bit of medical propaganda. County medical societies all over the country are writing in for counsel as to how to do the same thing in their respective communities. The whole thing has touched a responsive chord in the medical thought of the day. What accounts for this change of viewpoint?

The change in medical thought is no greater than the change in the practice of medicine within less than a generation. Preventive medicine, which used to be a matter for state and city health departments to attend to under the vague impersonal name of "public health," at the public charge, has now become a matter of intimate private and personal concern; and the physician who is not prepared to serve his public in the duties of preventive as well as curative medicine, is decidedly behind the times.

First to realize this change in the nature of medical practice, and quick to pioneer along the new line, have been the pediatricists. For a long time they have realized, and the public has agreed with them, that the feeding of the infant was one of the most important concerns in his management; and they have done their best to fit themselves to direct this. While they have not been so forward-looking in some other phases of preventive work for children, still they have stood forth as exemplars of the modern army of practitioners of preventive medicine.

The time has come, however, when the pediatricist must definitely take a forward step, if he is to serve his clientele to the height of his power for good. He must realize, first of all, that he occupies in his community, and especially in his private practice, quite the same position of authority that we so often have

mourned as having passed away with the old time family doctor. The mother who takes her baby to the pediatricist today, is quite prepared to feed the little fellow upon tack-nails, if that is what the specialist orders, provided only that he will specify clearly the number ordered at a dose, the brand desired, and the interval at which they shall be administered. If anyone doubts this, he has only to glance over the strange and wonderful assortment of feeding directions brought into the office of any children's man by mothers who have changed from other doctors. True, these mothers may, and frequently do, change from one doctor to another when they feel that the first man is not producing results; but as long as they elect to keep a baby under his direction, they are apparently willing to follow him to almost any lengths.

Now if preventive medicine for children is ever to come into its own, we must capitalize this willingness to follow our directions, for the benefit of the children under our care. There are certain matters upon which these mothers themselves are quite apt to take the initiative, and upon which they need no urging. Among these are breast-feeding, clean milk, avoidance of infection. Here we have only to guide and direct an interest already keen. But there are other matters in which we must take the initiative, or they will go by default. Chief among these are the preventive inoculations. The school law has of course made the question of smallpox inoculation comparatively easy for us, and the state campaign for protective inoculation against typhoid has broken the ground for us there; but diphtheria and scarlet fever protection will for a long time depend almost entirely upon the initiative of the private physician for their adoption. Few of us quite realize the position of almost exclusive responsibility that we occupy here. No welfare organization's effort, no broadside of school or state health department, no woman's club "drive" can accomplish anywhere near what one private physician who is genuinely

concerned in this matter can accomplish for his community. Nine mothers out of ten will listen with interest to such efforts as there. Five out of ten may go so far as to ask their private physicians what there is to these measures that are being urged in a community; but probably not more than one in ten will think again about securing these benefits for her children, unless her doctor thinks enough of their importance to urge them upon her. If a doctor does take these matters seriously, he can score very nearly one hundred per cent protection among the children of his clientele.

The experience of one physician along these lines is illuminating. For some years he has made it a rule to bring up the question of small-pox and diphtheria protection to every one of his mothers, either personally or through the efforts of an office nurse deeply impressed with the importance of so doing. His score here is almost 100 per cent perfect. Feeling that when he had urged this much "needle-work," he had gone almost as far as propriety indicated, he had become rather lax in urging the typhoid protective inoculations, as typhoid had become such a rare disease, especially among children, in the city where he practices. During a recent outbreak of this disease, however, this physician, who has prided himself upon the fact that his practice is becoming more and more preventive in its character, has had the mortification of being called up by several patients and asked whether he was in favor of typhoid inoculation. Fortunately for his peace of mind, as well as for his reputation, none of his little patients came down with the disease. But he felt decidedly awkward when he had to admit that, although he thought enough of his own family and of his own safety to inoculate himself and his own youngsters, he had not thought enough of his patients to stress the importance of the protection to them.

No one who has ever tried bringing any of these preventive measures to the attention of the mothers of his clientele,

will be troubled by any doubts as to how his efforts will be received. It is almost universally the case that, so far as parents from resenting such attempts as unwarranted interference with their privacy, or attempts on the part of the doctor to make work for himself, that they never seem to think of anything but his kindness and consideration in thinking out means for the protection of their children. Time and time again a doctor will be thanked in the most heartfelt way by a father or mother who seems completely taken back by his interest in the child concerned. In fact, one doctor who has adopted the somewhat unusual custom of dropping a note to parents reminding them that it is time for them to come in with their children for the usual spring or autumn looking-over, never fails to be surprised at the enthusiastic response that almost invariably greets this thoughtfulness for their children's welfare. He has yet to feel that any parents so reminded have resented his action as an attempt to "drum up work" for himself, as he at first feared might be the case. If we will remember that we are not advertising our own particular skill or ability in following out such measures as have been cited, but are simply bringing to the attention of those who otherwise would not know of them, certain simple measures for assuring the health of themselves or their children, we shall get a truer perspective in this matter; and shall be more willing to carry out what many of us have come to recognize as being a distinct part of our duty to our clientele,—namely, that of bringing to their attention the possibilities of good inherent in preventive medicine.

Eye, Ear, Nose and Throat

HENRY L. SLOAN, M.D., Editor
Charlotte

Delirium After Ophthalmic Operations.

Delirium and insanity may follow any surgical operation. Mental disturbances, however, occur more frequently after cataract extractions in the old

than after any other operation. It is essential to keep patients quiet under such conditions, because of the danger of injury to the operated eye in the form of opening of incision with prolapse of iris, loss of vitreous, intraocular hemorrhage, etc. The ophthalmic surgeon must keep this very dangerous post-operative complication in mind, in order to prevent it, if possible, and to successfully combat it when it occurs.

The writer recently had two such complications in one week following cataract extractions. While this trouble has been known for a long time, not very much has been written about it. Text books refer to it rather casually. W. R. Parker (Trans. Sec. Ophthalmol. A. M. A. 1923) gives an account of eleven cases following extraction of senile cataracts out of a total of 376 operations (0.29 per cent). He tells us that the first description of post-operative psychoses dates back to the sixteenth century, when Para called attention to the occurrence of mental symptoms after operation. Dupuytren described a "delirium nervosum" which occurred in the first three days following cataract extraction; Sherzog referred to similar cases in 1924. In 1863, Sichel described a peculiar delirium which occurred seven or eight times after cataract extraction. All his cases were past 60 years of age. In 1874 Arlt referred to similar cases after cataract operations. L. M. Gurley (A. J. Ophthalm. Aug. 1923) reports four such cases occurring in his practice after 100 cataract operations. In an editorial, (A. J. Ophthalm. Sept. 1923), H. V. Wurdemann refers to a suicide committed in a fit of temporary insanity following a surgical operation, and calls attention to the frequency of such dangers following ophthalmic operations.

The writer has had seven cases occur in his own practice following operations on the eyes out of a total of 125 cases with notes. The youngest patient was 40. He had had both eyes injured by an explosion of dynamite near him, which destroyed one eye and severely injured the other, as well as causing

many flesh wounds about his face, arms and chest. His only eye had to be bandaged and he was getting 2 per cent atropine in this eye every four hours. He was not an alcoholic. The delirium occurred on the third day after evisceration and lasted two days. This patient would answer questions rationally, but for the most part he was disoriented and wanted to go home, and would pay no attention to instructions. Opiates and sedatives failed to quiet him. Atropine was continued. He recovered soon after his wife's arrival.

The other six cases occurred in very old people, three women and three men, after cataract extraction. Their ages were: 64, 78, 79, 85, 70 and 69. Delirium occurred on the third day after operation and lasted from three days in five cases to five days in the sixth case. All six patients were entirely disoriented. The three men wanted to go home, one to feed his mule, another to save his barn which he thought was burning. The third had the same desire to go home, but was less violent. They would snatch the bandage from their eyes and one actually butted his head into the wall. Various sedatives were used, but without much success. Morphine did no good. Sod. bromide and paraldehyde acted better. These patients soon improved upon removal of the dressing from the unoperated eye and the arrival of some member of their families.

The women were less severe in their mental disturbance. One, an old negro woman of eighty-five, insisted on removing the dressing from her eye. When asked why she did it, she replied that she did not remove the bandage. Sod. bromide and careful watching kept her from destroying her eye. Another woman of seventy-five had a low, muttering delirium which was not typical, and which entirely ceased after discontinuing use of atropine. This patient had no tendency to disturb dressing, to get out of bed, etc.

A third woman was delirious. She too, was disoriented—insisted on getting out of bed and removing the dressings from her eyes. She was quieted by the

use of sod. bromide.

Strange to relate, none of the patients caused any permanent injury to their eyes.

The cause of this condition has been assigned to a varied etiology. Most European writers refer to an alcoholic background. None of my seven cases used alcohol at all. Atropine has been named. This seemed to be the cause of the delirium in one of my cases. Uremia, auto-intoxication, etc., have been accused. Many factors may contribute to this ailment. However, I am convinced that the chief are the age of the patient, bandaged eyes (complete darkness), and a totally strange environment. These patients are senile. They are put in a strange room to bed with eyes darkened, wondering many times if they will ever seen again, reflecting on their past, and thinking of the future with little hope.

With these factors in mind, the management of these cases comes logically to mind. In the first place, these old people should be put in the best possible general condition before operation. They should be cheered and encouraged as much as possible. Whenever possible some member of their family should remain at the hospital with them. They should spend at least the day and the night before the operation in the hospital, in order to become acquainted with his surroundings.

So much for the prevention of this delirium. When it arises, some member of the family should be sent for, if not already present, and he should remain with the patient. A nurse should be in constant attendance. The unoperated eye should be uncovered. Sodium bromide and chloral have proved useful. Morphine does not seem to act well in these cases. L. M. Gurley, M.D., of Johnstown, Pa., has designed and used with success in these cases, an eye shield which does not entirely exclude from the eyes (A. J. Ophthalm. Aug. 1923).

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Orthopedic Surgery

O. L. MILLER, M.D., *Editor*
Charlotte

Care of the Crippled

"There was a great holiday in Babylon. Well might the Babylonians rejoice, for had not their valiant warriors conquered those Israelite dogs, those worshippers of the hated Jehovah! The great Nebuchadnezzar rose from his throne and, crossing the spacious imperial chamber, stepped upon the balcony, that he might gaze upon the returning hosts. From the narrow street below shone the lately burnished spears of his victorious soldiers. Column after column marched past their royal master, driving before them their reluctant Hebrew prisoners. Men, women, and children, thousands of new slaves to build the empire to new grandeur. Then came a group which caused Nebuchadnezzar to glare with anger, and shudder with fear. These crippled children, what demons, had his soldiers brought with them! 'Bring me the prisoners' he said, 'that I may pick my slaves from among them. But bring me children in whom there is no blemish.'"

Thus opens a chapter in a new volume entitled "The Care, Cure and Education of the Crippled Child" by Henry Edward Abbott, Director Bureau of Information of the International Society for Crippled Children with headquarters at Elyria, Ohio.

This is the most comprehensive piece of literature yet brought out by a lay factor dealing with this subject. In the language of the author, "It is a study of American social and professional facilities for the care, cure and education of the crippled; a complete bibliography of literature bearing on this subject; and a complete directory of institutions and agencies engaged in this work."

The book represents exhaustive study in the history of cripples, and of the surgery dealing with the maimed and injured of this type; and sets forth the aim of the society sponsoring the volume in this statement.

"There are six divisions of action which complete this movement. The

first is to decrease, as far as possible, those causative influences and environmental conditions which are favorable to the creation of crippled children; the second, to locate and bring to the clinic or dispensary crippled children whom neighbors and ignorant or destitute parents are neglecting; and the third, to distribute these children, making surgical operation and acute hospital care available for those who are in need of treatment and convalescent care available for those whose general physical condition should be improved preliminary to operation, or whom proper conditions of environment and treatment during an extended period of time will improve or cure.

The fourth step in this work is to insure crippled children the general and fundamental education which physical handicaps have for so long made impossible. In addition, they should be given the benefits of occupational therapy, vocational training, and vocational guidance and assistance. Fifth, it should be ascertained definitely that children leaving special institutions do not return to the unfortunate environmental conditions in which their affliction originally developed. Last, it should be the duty of every interested individual to arouse public sentiment which will support legislation and make available funds to make possible the fulfillment of the five steps named above. Public co-operation should accompany all of this social machinery, and in addition there must be the all-important personal contact with the unfortunate little ones. The latter is a blessing to all those who participate, and is the most natural curative and cheering influence which can be afforded to the patients."

This mass of expression from a great lay body, the activity throughout the land in the past few years in this connection with particular reference to the shrine, civic clubs, welfare bodies, veterans' bureaus, certain state legislatures, and so on, are but the writing on the wall, so to speak, (a la the satellite of the first paragraph) of an era into which we are passing in which the public, in most instances wisely counseled,

has taken a big problem highly medical and surgical and named the way it should go for the best human interests. The medical and surgical aspect of the workmen's compensation act is but another expression of the same thing. This may be interpreted in certain quarters as the oncoming shadow of "state medicine," but it is really the reflection of the influence of a few painstaking surgeons who a decade or two ago began to demonstrate how economical and humanitarian was the considerate early treatment of extremity injuries and deformities under proper auspices, and how costly and chronic was the neglected case. From the clinics of a few of our pioneer orthopedic surgeons and the surgical reconstructive work in the late war has sprung the germ of this movement set forth in the publication mentioned. It is a natural order of things and its basic demand is improvement in the individual efficiency of all physicians and surgeons who practice and the economic and industrial education of the underprivileged disabled, by the public to whom they belong first or last.

Laboratories

HARVEY P. BARRETT, M.D., *Editor*
Charlotte

To those competent to have charge of a clinical laboratory and to those who know how to use it intelligently, the laboratory is and should be known as an aid in establishing a diagnosis.

W. C. MacCarty says "Scientific efficiency can only be attained by one method; namely, that of having the clinician intimately associate himself with the work and judgment of the pathologist without doing detailed laboratory technic, and the pathologist associate himself with the work and judgment of the clinician in his study of the patient without doing routine technical procedures for which the clinician is especially trained." MacCarty has stated that the laboratory reports on a clinical case may have one or more of the following values to the patient or doctor:

1. They confirm the diagnosis of

which there might be a clinical suspicion.

"2. They actually make the diagnosis in which there is no clinical diagnostic suspicion.

"3. They recognize accessory pathologic conditions.

"4. They correct the clinical diagnosis.

"5. They confirm the positive clinical diagnosis.

"6. They determine the degree of the process of disease.

"7. They determine the physical status of the patient preparatory to possible operation.

"8. They help to determine the extent of the operation.

"9. They give data for the pre-operative, operative and post-hospital prognosis.

"10. They determine the cause of death in non-operative and operative cases.

"11. They determine the cause of death due to false operative judgment.

"12. They determine faulty operative technical causes of death.

"13. They assist in determining causes and methods of surgical infection.

"14. They assist in clinical, surgical and laboratory research."

That the laboratory is not more helpful to physicians in making a diagnosis is the result of several factors, some dependent on the physician using the laboratory and others dependent on the man in the laboratory.

From the standpoint of the laboratory man physicians may be divided into five classes.

1. The doctor who, through indifference or ignorance, makes no use of laboratory procedures. One often hears the expression, "I would like to have all those tests done but I haven't time for that sort of thing;" or "I know what is wrong with my patient, so why should I have any laboratory work done on him."

2. The doctor who has heard, and maybe read, of different laboratory procedures but hasn't any very definite idea of their value. To quote this man: "I

wish you would examine this patient's blood and anything else you care to and tell me what is wrong with him."

3. Men who have too much confidence in the laboratory and who are inclined to disregard clinical findings because they do not coincide with the results obtained by laboratory examinations.

4. Men who have already made their diagnosis and have their own ideas so firmly fixed that they are unwilling to accept a positive laboratory finding if it does not coincide with their preconceived diagnosis.

5. The fifth class makes up the greater part of the intelligent physicians of today. In this class belongs the man who, in addition to his own careful clinical data uses the laboratory findings as an aid in establishing a correct diagnosis.

It is the duty of the laboratory man to familiarize members of the medical profession with those laboratory procedures which have a definite value in various disease conditions. It is necessary that he be not over-enthusiastic about new laboratory tests that have not been clearly demonstrated to be of value. He should be careful and conscientious enough in his work to be sure of the accuracy of his findings, and should not insist on his findings taking precedence over clinical facts determined by the physician. He should be especially careful in reporting negative findings, for example a negative sputum examination should be reported "No tubercle bacilli found," not "No tubercle bacilli present." He should not try to convey the impression that in his opinion the patient is free from tuberculosis. As a matter of fact there are only a very limited number of conditions in which the laboratory can positively establish a diagnosis, and this should be clearly understood by both the clinician and the pathologist. Any one associated with a clinical laboratory can give numerous instances of specimens received, prepared in such an unsatisfactory manner that it is useless to try to give an intelligent,—or better and honest,—report on the examination. In fact this

is so common that, unless physicians become educated in the proper preparation of specimens, and in the information that they have a right to expect from the examination, it seems impractical to try to run a clinical laboratory except when directly associated with the physicians using it. Of course this is hardly possible in rural districts but it could be made practicable in every town, small or large.

Honesty, an unbiased outlook, impartiality, common sense, accuracy and not too much enthusiasm are the most essential characteristics for a laboratory man in his relation with the physician who can and should intelligently use the laboratory.

Dentistry

W. M. ROBEY, D.D.S., *Editor*
Charlotte

Extractions.

Dentists are good mechanics, and American dentists have always held the lead in the whole world along this line. But, with it all, artificial substitutes for the teeth are only about thirty per cent as efficient as the natural organs. When you sacrifice the teeth without reason you may be setting up a more serious trouble in the digestive tract that may never be overcome.

The argument that extraction of the teeth is so simple, comparable to a major operation, that the elimination of all possible sources of trouble in the mouth is desirable in serious cases of possible focal infection, is due to an oversight of the fact that the mastication of the food is just as essential as the other processes of digestion. To Fletcherize may not relieve all the ills of mankind, but the proper mastication of food will prevent a great many of the most common and most serious digestive troubles.

Focal Infections.

If the only connecting link between the Medical and Dental professions were focal infection, cooperation would

be imperative. But lack of cooperation causes neglect of the patient, the sole reason for our existence as professions.

In the midst of some wild theorizing, wilder beliefs, and unreasonable radical dental surgery, we have been fortunate to have some really scientific workers who have kept their heads, sought for facts, and given their findings in such a manner that all may read.

I refer especially to the work of Weston A. Price, D.D.S., M.S., F.A.C.D., of Cleveland, "Dental Infections,—Oral and Systemic" covering researches for the past 25 years, and the expenditure of a quarter million dollars. In this work he answers by reports of investigations by himself and co-workers many of the questions that are constantly before us when considering the long list of diseases, as rheumatism, neuritis, kidney, heart, and circulatory lesions, etc., grouped by him as rheumatic lesions. Many of these conclusions differ radically with time honored and popular ideas.

Among the popular fallacies is that that the x-ray will reveal the presence of infection. In reality, it may, or may not reveal its effects. The area of absorption does not indicate the extent of the infection; neither does such an area necessarily contain any organism.

Another is that dental infections produce disturbance in other parts of the body. It is because the organism that has chanced to invade that tissue is one having specific qualities for that invasion and localization, regardless of the host, much as the organisms of erysipelas and mumps will respectively select the skin and parotid gland.

Price finds that "dental infections involving root canals and their apices and supporting structures, practically always contain streptococci, of which, biologically, there are many types or strains any of which may be the important causative factor for any of the various types of rheumatic group lesions, regardless of biological classification. The elective localization and attacking qualities are developed by environment and

are, consequently, a factor of the soil, or host."

While these and other new findings are very disturbing, they relieve us of much of the confusion which has surrounded our efforts since this question of dental focal infection has become so generally recognized. But in spite of the vast amount of animal experimentation and clinical reports, it is unfortunate that the application of the results to every day practice must be made with the same consideration of soil, or host.

Urology

A. J. CROWELL, M.D., *Editor*
Charlotte

For twenty-four years our work has been limited to genito-urinary diseases. During this time we have witnessed a great reformation in the management of urological cases. Twenty-four years ago, the urologist was looked upon as a "clap-doctor," and many patients felt embarrassed to visit the office of one whose work was limited to genito-urinary disease. This made the work of the pioneer urologist difficult and at times embarrassing; difficult because of the isolation from other urologists,—deprivation of their counsel, and embarrassing because of the stigma put upon one visiting the office of a genito-urinary surgeon.

The pioneer urologist, with his nearest consultant three or four hundred miles away, could sympathize with the medical missionary in the foreign field, confronted by emergencies with no one to share his responsibilities.

Those of us who entered this field of endeavor knew full well the difficulties to be overcome as well as the need for the specialty. However, we determined to give it the recognition it deserved and to fill a need not adequately recognized. Need and opportunity go hand in hand, and he who fills a need cannot fail. Entering a field and filling a need are separate and distinct. Nitzer, Brown, Young, Geraghty, Guiteras, Lewis, Cun-

ningham, Cabot, Fuller,¹ Keys, Chute, Wishard and others filled a need. Many of us entered with blurred vision and unworthy motives, as in every other branch of medicine, but, as a whole, the personnel is equal to the best and the specialty is recognized as second to none in importance and precision. In fact we believe greater progress has been made in urology and genito-urinary surgery during the last twenty-five years than has been made in any other surgical specialty. Since Brown, on June 9, 1893, first catheterized the male ureter, to the present moment, urology has grown by leaps and bounds, attracting many of our most brilliant men to its survice, until today the need has largely been filled. Every city of importance has its competent urologist equipped with instruments of precision at the call of the surgeon or internist and expert genito-urinary surgeons are² today in easy reach.

Definite illustrations of the importance of urology and its progress, and the results in genito-urinary surgery, as compared with those obtained twenty-five years ago, will be discussed in later issues.

Surgery

A. E. BAKER, SR., M.D., *Editor*
Charleston

Grafts—Skin and Gland

The faulty technique in skin grafting is often the cause of failure, and in a measure due to surgical text books being too indefinite and unsatisfactory in giving in detail the requisites necessary to obtain good results.

Dr. McWilliams in a recent paper on "Principles of Skin Grafting" states that there are four types of skin graft. (1) Thiersch grafts (Ollier an independent co-discoverer); (2) Reverdin's minute plugs of full-thickness skin; (3) free, full-thickness non-pedicled grafts; and (4) pedicled flaps (not true grafts.)

Thiersch grafts nearly always take when applied to fresh sterile operative wounds, such as the wound of breast

amputation. For sterilization of the granulating surface the author employs Dakin's solution. One of the most typical uses of the Thiersch graft is the treatment of total avulsion of the scalp.

McWilliams seldom employs Reverdin grafts.

For success in the grafting of free full-thickness non-pedicled grafts the author gives fourteen rules.

The use of pedicled flap of skin with a considerable layer of attached fat is one of the most dependable methods for the repair of tissue defects.

The author describes three general methods of using pedicled flaps and gives thirteen rules for the successful formation of single pedicled skin flaps. The article is summarized as follows:

1. The most efficient method of treating total avulsion of the scalp consists in immediate surgical cleansing of the raw area, shaving and surgical cleansing of the avulsed scalp, and drilling of the bare bone into the diploe at numerous points, followed immediately by covering the entire raw area with Thiersch grafts taken from the avulsed scalp. The totally avulsed scalp should never be replaced as it will not live.

2. Of all types of skin grafting, autogenous Thiersch grafts are the most successful and have the widest applicability. Their disadvantage is their subsequent contraction. Isografts are usually unsuccessful.

3. Autogenous, free, full-thickness, non-pedicled flaps are somewhat less successful, but well worth a trial provided care is taken in selecting the case and a careful technique is used. Fresh operative wounds with a muscle base are most favorable. A fat base is most unfavorable. Contraction of the graft is slight but a disadvantage is the subsequent pigmentation. All subcutaneous fat should be carefully trimmed from the graft with scissors. The transplant should be punctured at numerous points with Carrel's punch, and very firm, even pressure (most important) should be applied to the entire surface of the graft by the dressing.

4. Pedicled flaps are uniformly successful if there is no necrosis of the end

of the flaps. At a preliminary operation the flap may be elevated and freed and then sewed back in place to determine the chances of necrosis before it is transplanted into its final position. These flaps should retain their subcutaneous fat.

5. Eyebrows may be grafted most successfully by taking half the opposite eyebrow and transplanting it with a pedicle. Slightly less successful are free, full-thickness slips taken from the hairy scalp.

6. It is very important to observe that, in contradistinction to free, full-thickness grafts with which the firmest subsequent pressure is essential, the pressure on pedicled flaps should be only moderate as otherwise necrosis will result from obstruction to the blood supply by pressure on the pedicle of the flap.

7. The subsequent contraction that takes place in Thiersch and Reverdin grafts must be taken into account. Because of this contraction such grafts should not be used to cover raw areas in the neck, axilla, cubital fossa, the elbow, or popliteal space. In these localities, free, full-thickness skin grafts or pedicled flaps should be employed.

8. It should be noted also that free, full-thickness grafts should have no subcutaneous fat on them since their blood supply is obtained from the raw base and fat is a poor conductor of the circulation, but in pedicled flaps the subcutaneous fat should remain since their circulation is maintained through the pedicle and the fat forms a good cushion on which the skin can move freely.

9. The only way to cure an old roentgen-ray burn is to excise the raw area widely, sterilize it, and then cover it with a Thiersch graft. Full-thickness grafts, whether pedicled or not, do not take because the surrounding endarteritis causes a deficiency in their blood supply.

10. Free, full-thickness grafts should not be cut larger than the area to be filled. Therefore some stretching will be necessary when they are transplanted. This is in contradistinction to pedicled flaps, which should lie easily and

should not be stretched. Pedicled flaps must be cut one-third larger than the area to be filled to allow for shrinkage.

11. Surgical textbooks are too indefinite regarding the results of iso-skin grafts and the replacement of the totally avulsed scalp. The utility of each of these procedures cannot be too strongly emphasized. Only the partially avulsed scalp with a pedicle should be replaced.

12. The transplantation of sections of monkey or other animal glands (i. e. testes) is entirely without scientific basis, and has been exploited for commercial purposes only. This procedure is no less certain to fail than the transplantation of iso-skin grafts. Both methods should be unhesitatingly condemned by conscientious surgeons.

Mental and Nervous

JAS. K. HALL, M.D., *Editor*
Richmond

Syphilis and Diagnostic Perplexities.

I am increasingly impressed by the failure of good diagnosticians frequently to make use of the suspicion of chronic syphilitic infection as an aid in clarifying an obscure condition. It should be remembered that this infection is widespread, that it is democratic in its habits, and without respect for age, sex, social status, professional occupation, and season of the year. Every medical man, specialist, or general practitioner should have constantly in mind the possibility of encountering unrecognized manifestations of this malady in his daily routine. Is there a single subjective symptom which may not be syphilitic in origin. Is there any age at which the disease may not appear in chronic form? Is there any situation, clear-cut or obscure, which may not be explained by luetic pathology? No general examination is complete without a careful Wassermann; no opinion of a general or a localized nervous disorder

is safe from valid doubt unless the opinion be fortified by serological evidences of freedom from syphilis. Some of these times life insurance companies are going to stop insuring syphilitics.

Lawlessness and Law.

Frequently we are called upon to read the statistical evidences of the activities of law-enforcement officials. The figures, often all but appalling by their size, would seem to carry along with them the hint that the citizenship is to regard the statistical table as a sort of moral thermometer. The reasoning would seem to be that the more arrests that are made the better the law is enforced; therefore, the more moral the community is. Is the reasoning sound? Does lawlessness consist in the violation of a statutory—a written-down—law? If so it might be well not to write down too many "don'ts." The medical man believes that the individual may exhibit considerable anatomic and physiologic deviation from the accepted standard of normality and yet be in tolerable health. Once I knew a man whose pulse rate was 46 to the minute, but he went along and did a man's work, and so well as I was able to find out he was in good health. I know another man who visits the toilet but once a week, yet he says he has had no illness for thirty years. Free indulgence in harmless habits should not constitute crime. The abolition of some existing laws would tend to relieve the unwholesome congestion in many punitive institutions without hurt to the community.

Roentgenology

ROBT. H. LAFFERTY, M.D., *Editor*
Charlotte

Report of Roentgen-Ray Society Meeting

The annual meeting of the Eastern Section of the American Roentgen-ray Society was held at Atlantic City January 22d-24th. Dr. Hugh H. Young of the Brady Urological Institute, Baltimore, was a guest and presented a paper

on "The Relation of Roentgenology and Urology." He emphasized that each specialty can and should be of the greatest assistance to the other, giving many illustrations both by history and roentgenogram. He exhibited the latest model of his well-known table. He also discussed the treatment of bladder tumors by radiation and recommended the combined radium and x-ray. He exhibited various instruments for applying radium to the different areas of the bladder.

The second session was given over entirely to therapy. Dr. Stern of New York, in a paper on "Cases of Lung and Mediastinal Neoplasm Treated with High Voltage Therapy," showed some very encouraging results, emphasizing the fact that often the most hopeless-looking cases may respond most beautifully to this type of therapy. The fact was brought out here and in connection with other papers that it is probably not best to get in the entire dose quickly.

Dr. Pancoast of Philadelphia, in a paper on "The Status of Roentgen Treatment of Hemorrhagic Purpura," showed that only a temporary improvement could be expected and recommended it as a palliative measure to be used only until some other treatment could be instituted.

Drs. Hazen, Whitmore and Milstead of Washington, presented a paper on "The Roentgen Ray Treatment of Chronic Spondylitis Deformans, Chronic Sacro-Iliac Lumbalgia and Chronic Vertebral Rheumatism." A number of cases were reported as having obtained relief from pain. Theories were offered which were hardly as satisfactory as the results reported.

Dr. Gerber of Providence read a very excellent paper on "X-Ray Treatment of Surgical Tuberculosis." He referred especially to tubercular glands, bones, joints and peritonitis. In the glands most gratifying results were reported generally without surgery and in cases of sinuses following surgery. In bones and joints as an adjunct to surgery it is of much value. In peritonitis it is an

adjunct to surgery giving wonderful results in hastening the recovery and in the healing of fistulous tracts.

Dr. Dresser of Boston, gave a beautiful demonstration of "Metastatic Manifestations of Hypernephroma in Bone."

Further report of experiences with the use of tetrabrom-phenolphthalein in gall bladder work was made by Dr. W. H. Stewart of New York City. Some severe reactions were mentioned but he called attention to the fact that no deaths as yet had been reported. Still he only recommended it in selected cases that were in the hospital. Reference was made to a recent article in Surgery, Gyn. and Obs. by Whitaker and Milliken of Boston, who used the iodine salt which is heavier and of which only half as much is required as of the bromine salt. It was reported that the results in about 40 cases were splendid and the reaction was only very slight if any. One of the outstanding events of the meeting was the release by Dr. Lewis G. Cole of New York of the cinematographic study of tuberculosis. Dr. Cole has been doing some wonderful work along this line, having made a splendid film of the gastric motor phenomenon and he has in process a reel on the study of gastric ulcer.

News Items

Dr. Raiford T. Warnock announces his association with Drs. Bunce, Landham and Klugh, 65 Forrest Avenue, Atlanta, Ga. Dr. Warnock has recently completed a post-graduate course in Clinical Pathology at Harvard Medical School.

Dr. A. S. Priddy, aged 59, superintendent of the Virginia Epileptic Colony, died in Lynchburg January 13th of Hodgkin's disease. He was a psychiatrist and a recognized authority on mental diseases.

Dr. E. M. McGruder, for more than thirty years a leading physician of Charlottesville, Virginia, died in that

city January 10th. He was a member of the faculty of the University of Virginia, and chieftain of the American Clan Gregor Society.

Dr. E. C. Levy, former director of the Richmond department of public welfare, has accepted the professorship of preventive medicine at the Medical College of Virginia, and will take over his new duties at the opening of the second semester, beginning Jan. 27, it was announced by Dr. Manfred Call, dean of the school of medicine.

Dean Call expressed the greatest pleasure at his acceptance of the professorship at the college.

Discussing his future work at the Medical College, Dr. Levy said:

"I am greatly pleased to have this foundation for work that will enable me to remain in Richmond, which has been my life-long home and to which I am deeply attached.

"Our schools for health officers are supplying only a small fraction of the trained men needed in public health work. For this reason, as well as others which might be mentioned, it is generally agreed that, for many years to come, health officers will be recruited chiefly from the ranks of the regular medical profession. The importance of sound teaching of the principles and practice of public health as part of the regular medical curriculum is therefore apparent.

"Even in the case of those physicians who do not themselves enter the public health field such teaching is important. The preventive phase of medicine is every year being more and more emphasized. Furthermore, physicians who received sound instruction in public health when they were medical students will have learned the importance of that cordial co-operation with the health authorities which is so essential.

"It will be a great pleasure and privilege," said Dr. Levy, to teach public health in an institution having the splendid history and the present high reputation of the Medical College of Virginia."

Asked as to his plans for the future, in addition to the college professorship, which, it is understood will not occupy his entire time, Dr. Levy went on to say:

"There is a big field for consultation work in public health matters; in other words, for what has been called 'the private practice of public health.' Public health work has developed so rapidly that the constituted health authorities cannot possibly cover the entire ground. The unoccupied field is large and diversified.

"Take the matter of industrial hygiene, for example. I have quite recently visited several large manufacturing plants in the North that have miniature health departments of their own to look after the physical and general welfare of their employees.

"This is not a matter of sentiment with them. They find that it pays in lessened loss of time on account of accidents and illness, in decreased labor turnover, in increased factory output and in general contentment all along the line.

"This is one of the big opportunities right here in Richmond. A few of our local concerns have already realized this, but most of them have not. This is only one of many opportunities.

"The general public has become fairly well educated to the importance of having well organized public health departments. It is only a question of getting them to realize how much there is to be done in health lines outside of what the public authorities can be expected to do, in order to open up an almost unlimited field for the private practice of public health."—Richmond News-Leader.

Publications Received

SURGICAL PATHOLOGY, by William Boyd, M.D., M.R.C.P., Ed., F.R.S.C., Winnipeg, Canada. W. B. Saunders Co., Philadelphia, Pa.

There is a meaningful foreword by Wm. J. Mayo. "Today pathology is a science dealing with living things and conditions. It furnishes a groundwork of knowledge which facilitates early diagnosis of disease in the living, and its cure by scientific methods. What is needed today in the literature of surgical pathology is a work that will serve as a handbook to the surgeon and the internist, and a guide to the beginner in the field of medicine." "It is a sincere attempt to place pathology before the student and the practitioner from the practical viewpoint."

The preface says "Although not strictly in place in a work on pathology, the clinical features of most of the conditions have been sum-

marized, so that the relation of the pathology to symptomatology could be demonstrated."

This is certainly a valuable feature of the work. A pathologist once told the reviewer that Osler's Practice of Medicine was the best text-book on pathology for the clinician; Boyd should prove a valuable aid in diagnosis.

The style may be judged from the opening lines: "The surgery of today is based on pathology. Unless he builds on that solid foundation the surgeon is no better than a hewer of flesh and a drawer of blood." As MacNider would say, "Isn't that lovely?"

"Chronic Appendicitis" is discussed in an illuminating manner.

The style is clear and definite and the different pathological conditions are dealt with with a fine sense of proportion.

Miscellaneous

Principal Causes of Death, 1923.

The Department of Commerce announces that 1,193,017 deaths occurred in 1923 within the death registration area of continental United States, representing a death rate of 12.3 per 1,000 population as compared with a rate of 11.8 in 1922.

The death registration area (exclusive of the Territory of Hawaii) in 1923 comprised 38 States, the District of Columbia, and 14 cities in non-registration States, with a total estimated population on July 1 of 96,986,371, or 87.6 per cent of the estimated population of the United States.

The increase in the rates from influenza, from 31.4 per 100,000 population in 1922 to 44.7 in 1923, and from pneumonia (all forms) from 102.1 per 100,000 population in 1922 to 109 in 1923, accounts for nearly half the increase in the rate from all causes. Some of the other causes for which the rates increased are diseases of the heart, measles, cerebral hemorrhage, whooping cough, cancer, automobile accidents, nephritis, railroad accidents, and accidental falls.

Decreases appear in the death rates from tuberculosis (all forms), diphtheria, malaria, and typhoid and paratyphoid fever.

Rural Mail Service.

Few institutions in the history of American progress can be credited with a more salutary effect upon the march of that progress than the Rural Mail Service of the Post Office Department.

No other single instrumentality has done more than the Rural Mail Service toward "bringing the city to the country," and relieving the prosaic existence of farm life, or has been as effective in establishing closer contact between the farmer and his markets. It has been the most important factor in making agriculture an exacting business instead of its one-time precarious classification which conveyed no broader meaning than "tilling the soil."

Twenty-nine years ago the farmer, and his wife, and children, led an existence of almost complete isolation, living upon widely scattered farms, some of them miles apart. They had comparatively little communication with their neighbors or the outside world, ex-

cept that derived from weekly trips to the adjacent village. More often than not the farmer lost a full day's work and his crops were neglected in order to obtain expected mail at the village post office.

In those days the farmers' mail consisted largely of communications from relatives and friends. Today the daily mail includes, usually on the very date of publication, the metropolitan newspaper, containing market reports and agricultural news; the weekly and monthly farm journals and magazines, and business letters from the village merchant and the more pretentious establishment in the distant city. All of these are now brought to his door or to the box a few yards away.

The rural carrier is the farmer's post office and his agent. Through him he conducts transactions for the sale of his live stock, grain, and other farm produce. From him he buys stamps and pays his bills by postal money order. In short, the letter carrier is the medium that has transformed the once secluded habitant of the rural district into a cosmopolitan citizen, conversant with current affairs and occupying a larger place in the destinies of a great nation.

It was Postmaster General John Wanamaker who first officially suggested in 1891 the rural mail idea to Congress. The plan was fought in the legislative branch of the Government for five years before it was given a try-out.

The first bill authorized the establishment of the service was introduced in the House by Representative James O'Donnell of Michigan, January 5, 1892. It carried and appropriation of \$6,000,000, but failed of passage. A year later Congress was induced to appropriate \$10,000 for experimental purposes followed in 1894 by \$20,000 more. Mr. Wanamaker, believing the amount insufficient even for experimental service, declined to use the money.

On January 9, 1896, \$10,000 was added by Congress and on October 1, the same year the first experimental rural delivery service was established simultaneously on three routes in West Virginia,

one from Charleston, one from Uvulla, and one from Halltown. From this small beginning, nine months later found the service operating on 82 routes emanating from 43 post offices in 29 states. Twenty-eight years later, or June 30, 1924, the Rural Mail Service had grown to 44,260 routes with a total mileage of 1,205,714.

In comparison with the insignificant appropriation of \$10,000 made by Congress more than a quarter of a century ago to inaugurate the service, it now requires an annual expenditure of \$89,250,000 to keep it functioning.

The first county to be completely covered by Rural Mail Service was Carroll County, Maryland, where county service was established December 20, 1899. There are very few counties in the country today that are not honeycombed to the uttermost corners with free mail delivery.

By 1915, 26,080 fourth class post offices had been discontinued as a result of the extension of the Rural Mail Service. It is estimated that an annual saving of \$1,613,040 was accomplished by the discontinuance of these offices while the elimination of star, or contract routes is estimated to save \$3,482,670 per annum.

When the service was first inaugurated the salaries of rural carriers was only \$200 a year. They may now get as much as \$2,160 a year, depending on the length of the routes, while the motor routes of 50 miles or more pay salaries of \$2,450 to \$2,600.

Illinois leads the nation both in the number of rural routes and in mileage, there being 2,637 routes covering a distance of 70,677 miles in that state. Hawaii is last with one route 17 miles long. North Carolina has 1,402 routes covering 35,499 miles; Virginia 1,145, with a mileage of 26,884, and South Carolina 892, covering 22,797 miles.

A Munificent Gift to Medicine.

A gift of \$250,000 to Indiana University by Mr. and Mrs. William H. Coleman, of Indianapolis, for a women's hospital to be used principally for lying-in

patients has been announced by officials of the university.

In presenting the gift Mr. Coleman made the following statement:

"Mrs. Coleman and I have made this gift to the Indiana University school of medicine to be used in building a woman's hospital to be used principally for lying-in patients and a smaller part for those who need the expert attention of surgeons and physicians, and where those who are unable to pay can have the same high order of attention as those who are able to pay part or full price for such services. We entrust this work to the trustees of Indiana University, knowing it to be a nonpartisan institution governed by men whose aim in life is to work for the good of mankind, and whose work will go on as long as the state of Indiana is in existence. We also make this gift as a memorial to one of the truest and best daughters any parent ever were blessed with, Suemina Coleman Atkins, who from early childhood devoted her every effort to the helping of the afflicted and those less fortunate than herself."

J. W. Fesler, president of the board of trustees of Indiana University, commented on the new Coleman gift as follows:

"That Indiana University should be selected to establish and administer this last and greatest gift of Mr. and Mrs. Coleman is most gratifying. Present hospital accommodations for women in our state who are unable to pay for necessary medical and surgical attention are wholly inadequate. This very generous gift of Mr. and Mrs. Coleman assures such a hospital immediately upon the passage of a bill by the legislature authorizing the acceptance of this gift and providing for its maintenance. Of scarcely less importance to the people of the state is the fact that this hospital, in accordance with the desire of the donors, will contribute much to the training of physicians and nurses who will find here opportunities for study as good as may be found anywhere. Needless to add the trustees of the university will conscientiously endeavor to admin-

ister this fund and to carry out faithfully the splendid purposes of Mr. and Mrs. Coleman."

Mr. Coleman is an outstanding public man in the city of Indianapolis.

Mr. and Mrs. Coleman have made other substantial gifts for medical work. Last year they gave \$25,000 to the Riley Memorial Hospital fund during the campaign in Indianapolis. Details of the new \$250,000 gift and its execution were worked out by William L. Taylor, legal advisor representing Mr. and Mrs. Coleman, and Dr. S. E. Smith, provost, representing the university.

Respecting the Coleman gift for a woman's hospital, Dr. Smith had the following to say:

"The munificent gift of Mr. and Mrs. William H. Coleman to Indiana University for a woman's hospital in connection with the school of medicine is proof of the wish of the donors to bring comfort and protection to hundreds of women in the state of Indiana. It is a noble contribution to human welfare and will serve a worthy purpose for generations to come.

"This is the second generous gift of Mr. and Mrs. Coleman to Indiana University for medical purposes. Only recently they contributed \$75,000 with which to endow in the university school of medicine the three chairs—ophthalmology, surgery and gynecology.

Size of Families, in the Birth Registration Area, of Mothers of 1923

Washington, D. C., December 29, 1924. The Department of Commerce announces that in the accompanying table data are given only for fathers aged 40 to 49 years as these on the whole probably represent completed families.

To occupied fathers aged 40 to 44 there were born in the birth registration area of the United States 147,208 children in the year 1923, and to occupied fathers aged 45 to 49, 66,764 children.

To mothers with husbands aged 40-44 the average number of children ever born was 5.6 and the average number living 4.9.

To mothers with husbands aged 45-49 the average number of children ever born was 6.4 and the average number living 5.5.

Considering only fathers aged 40 to 44 and only those occupations represented by at least 50 births, the highest average number of children ever born (7) appears for coal mine operatives and the lowest average (2.8) for architects; the highest average number of children living (5.9) appears for coal mine operatives and the lowest average number of children living (2.6) for actors and showmen.

ANNUAL REPORT OF THE SURGEON GENERAL OF THE U. S. P. H. S. FOR 1924.

Among the many features of value we will mention only a few and those the more striking and unexpected.

In the Division of Pharmacology there is a valuable report of investigative work leading to the definite suggestion that sulpharsphenamine is more effective in the treatment of syphilis than either of the two more commonly used arsenicals. Intramuscular injections of sulpharsphenamine in syphilitic rabbits were effective as intravenous injections, and treatment by mouth brought about complete healing of lesions. The drug has given satisfactory results in Vincent's angina.

Under "Tuberculosis": "It has been observed that the injected animal requires a relatively large supply of vitamin A to sustain a fair state of nutrition."

Interstate R. R. Drinking Water Supplies: Nov. 16, 1922, about 40 per cent of equipment had separate compartment coolers; in September, 1923, this had increased to 50 per cent. The time limit of completion was extended to Jan. 1, 1925.

Weekly telegraphic reports of health conditions are received from the health officers of more than three-fourths of the State. Among them North Carolina and Virginia. South Carolina furnishes these reports monthly. The information is disseminated

Considering only fathers aged 45 to 49 and only those occupations represented by at least 50 births, the highest average number of children ever born (8.1) appears for foremen, overseers and inspectors and for coal mine operatives and the lowest average (3.3) for dentists, physicians and surgeons; the highest average number of children living (6.6) appears for coal mine operatives and the lowest average number of children living (3) for dentists, physicians and surgeons

promptly and is an important factor in the control of epidemics.

Disease Prevalence: Under this head it is rather startling to note that deaths *per hundred cases* from these diseases were as follows: diphtheria, 8:5; measles, 1.4; scarlet fever, 2; small pox. 5.

Health Information by Radio: This service gives out authoritative information on health matters in popular language.

Dentistry: "In recognition of its place in medicine, dentistry has been introduced into all the marine hospitals."

Graduate Nurse

Applications for graduate nurse and graduate nurse (visiting duty) will be rated as received until June 30, 1925. The examinations are to fill vacancies in the United States Veterans Bureau and in the Indian and Public Health Services, at entrance salaries ranging from \$1,020 to \$1,680 a year.

Applicants for the position of graduate nurse must have been graduated from a recognized school of nursing requiring a residence of at least two years in a hospital having a daily average of thirty patients or more, giving a thorough practical and theoretical training, and must show evidence of State registration.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Roster of Officers of the Tri-State Medical Association from Organization in 1898 to Date

(In response to a call, a temporary organization was effected at Virginia Beach, Va., August 31, 1898, with Dr. W. H. Cobb, President; Dr. Paulus A. Irving, Secretary, and Dr. H. H. Dodson, Treasurer.)

Year	Place of Meeting	President	Vice-President	Secretary-Treasurer
1-1899	Charlotte, N. C.	*W. H. H. Cobb, Goldsboro, N. C.	H. B. Weaver, Asheville, N. C.	P. A. Irving, Richmond, Va., Secretary
2-1900	Charleston, S. C.	*W. H. H. Cobb, Goldsboro, N. C.	C. W. Kollock, Charleston, S. C.	H. H. Dodson, Greensboro, N. C., Treasurer
3-1901	Richmond, Va.	C. W. Kollock, Charleston, S. C.	W. L. Robinson, Danville, Va.	Paulus A. Irving, Richmond, Va.
4-1902	Asheville, N. C.	*J. N. Upshur, Richmond, Va.	Manning Simons, Charleston, S. C.	
5-1903	Columbia, S. C.	*J. A. Burroughs, Asheville, N. C.	*John R. Gildersleeve, Tazewell, Va.	
6-1904	Danville, Va.	Davis Furman, Greenville, S. C.	John W. Long, Greensboro, N. C.	H. A. Royster, Raleigh, N. C.
7-1905	Greensboro, N. C.	*W. L. Robinson, Danville, Va.	S. C. Baker, Sumter, S. C.	
8-1906	White Stone, S. C.	H. A. Royster, Raleigh, N. C.	*Hugh M. Taylor, Richmond, Va.	
9-1907	Norfolk, Va.	Rolfe E. Hughes, Laurens, S. C.	David A. Stanton, High Point, N. C.	Rolfe E. Hughes, Laurens, S. C.
10-1908	Charlotte, N. C.	Stuart McGuire, Richmond, Va.	*A. B. Knowlton, Columbia, S. C.	
11-1909	Charleston, S. C.	Albert Anderson, Raleigh, N. C.	Stuart McGuire, Richmond, Va.	Rolfe E. Hughes, Laurens, S. C.
12-1910	Richmond, Va.	LeGrand Guerry, Columbia, S. C.	*J. H. March, Fayetteville, N. C.	

*Deceased.

Year	Place of Meeting	President	Vice-President	Secretary-Treasurer
13-1911	Raleigh, N. C.	Joseph A. White, Richmond, Va.	Joseph Graham, Durham, N. C.	
			*T. Prioleau Whaley, Charleston, S. C.	
14-1912	Columbia, S. C.	J. Howell Way, Waynesville, N. C.	*Samuel Life, Lynchburg, Va.	J. Howell Way, Waynesville, N. C.
			Thos. E. Anderson, Statesville, N. C.	
15-1913	Norfolk, Va.	A. E. Baker, Charleston, S. C.	Frank H. McLeod, Florence, S. C.	Rolfe E. Hughes, Laurens, S. C.
			A. L. Gray, Richmond, Va.	
			A. J. Crowell, Charlotte, N. C.	
16-1914	Wilmington, N. C.	Southgate Leigh, Norfolk, Va.	*A. B. Knowlton, Columbia, S. C.	Rolfe E. Hughes, Laurens, S. C.
			Stephen Harnsberger, Warrenton, Va.	
			*E. Reid Russell, Asheville, N. C.	
17-1915	Charleston, S. C.	*E. C. Register, Charlotte, N. C.	J. H. Taylor, Columbia, S. C.	Rolfe E. Hughes, Laurens, S. C.
			*J. Allison Hodges, Richmond, Va.	
			*Charles T. Harper, Wilmington, N. C.	
18-1916	Richmond, Va.	Jas. H. McIntosh, Columbia, S. C.	F. H. McLeod, Florence, S. C.	Rolfe E. Hughes, Laurens, S. C.
			Carl V. Reynolds, Asheville, N. C.	
			Beverly R. Tucker, Richmond, Va.	
			G. Augustus Neuffer, Abbeville, S. C.	Rolfe E. Hughes, Laurens, S. C.
19-1917	Durham, N. C.	J. Allison Hodges, Richmond, Va.	James K. Hall, Richmond, Va.	
			Addison G. Brenizer, Charlotte, N. C.	
20-1918	Charleston, S. C.	D. T. Tayloe, Washington, N. C.	J. R. Yuong, Anderson, S. C.	Rolfe E. Hughes, Laurens, S. C.
			Addison G. Brenizer, Charlotte, N. C.	
			J. R. Young, Anderson, S. C.	Rolfe E. Hughes, Laurens, S. C.
21-1919	Richmond, Va.	R. S. Cathcart, Charleston, S. C.	Douglas Vanderhoof, Richmond, Va.	
			L. A. Crowell, Lincolnton, N. C.	
			Francis A. Coward, Columbia, S. C.	Rolfe E. Hughes, Laurens, S. C.
22-1920	Charlotte, N. C.	Robert C. Bryan, Richmond, Va.	C. M. Miller, Richmond, Va.	
			A. J. Crowell, Charlotte, N. C.	
			A. R. Taft, Charleston, S. C.	Rolfe E. Hughes, Laurens, S. C.
23-1921	Spartanburg, S. C.	J. P. Munroe, Charlotte, N. C.	H. S. Hedges, Charlottesvile, Va.	
			*J. A. Williams, Greensboro, N. C.	
			W. W. Fennell, Rock Hill, S. C.	James K. Hall, Richmond, Va.
24-1922	Norfolk, Va.	W. W. Fennell, Rock Hill, S. C.	Karl S. Blackwell, Richmond, Va.	
			J. T. Burrus, High Point, N. C.	James K. Hall, Richmond, Va.
			H. R. Black, Spartanburg, S. C.	
25-1923	High Point, N. C.	S. S. Gale, Roanoke, Va.	W. E. Driver, Norfolk, Va.	
			I. P. Battle, Rocky Mount, N. C.	James K. Hall, Richmond, Va.
			*R. B. Epling, Greenwood, S. C.	
26-1924	Greenville, S. C.	Chas. O'H. Laughinghouse, Greenville, N. C.	D. A. Stanton, High Point, N. C.	
			S. B. Sherard, Gaffney, S. C.	James K. Hall, Richmond, Va.
27-1925	Richmond, Va.	F. H. McLeod, Florence, S. C.	Garnett Nelson, Richmond, Va.	
			C. N. Lawrence, Winston-Salem, N. C.	James K. Hall, Richmond, Va.
			E. W. Carpenter, Greenville, S. C.	

*Deceased.

MEMBERS OF THE TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

Non-Resident

Hagner, F. R.	Washington, D. C.
Hoke, Michael	Atlanta, Ga.
Parker, L. F. (Hon.)	Baltimore, Md.
Shands, A. R.	Washington, D. C.
Sharpe, William (Hon.)	New York City
Stirling, W. C.	Washington, D. C.
Summers, Chas. L.	Baltimore, Md.
White, Chas. S.	Washington, D. C.
White, W. A. (Hon.)	Washington, D. C.
Williams, Tom A.	Washington, D. C.
Worthington, F. D.	Frederick, Md.

North Carolina

Abernethy, C. O.	Raleigh
Allan, William	Charlotte
Allgood, R. A.	Fayetteville
Ambler, C. P.	Asheville
Anders, McTyeire G.	Gastonia
Anderson, Albert (Hon.)	Raleigh
Anderson, Thos. E.	Statesville
Archer, Isaac J.	Black Mountain
Ashworth, W. C.	Greensboro
Averitt, Kirby G.	Fayetteville
Barron, A. A.	Charlotte
Battle, I. P.	Rocky Mount
Beall, L. G.	Black Mountain
Beam, Hugh M.	Roxboro
Biggs, M. H.	Rutherfordton
Blair, A. McNeil	Southern Pines
Boice, E. S.	Rocky Mount
Bonner, O. B.	High Point
Bost, Thos. C.	Charlotte
Brenizer, Addison G.	Charlotte
Brooks, G. M.	Elm City
Brooks, R. E.	Burlington
Burrus, J. T.	High Point
Burt, S. P.	Louisburg
Carroll, R. S.	Asheville
Cole, W. F.	Greensboro
Coppridge, W. H.	Durham
Croom, G. H.	Wilmington
Crowell, A. J.	Charlotte
Crowell, L. A.	Lincolnton
Davidson, J. E. S.	Charlotte
Davis, James W.	Statesville
Dawson, W. W.	Grifton
Deans, A. W.	Battleboro
De Laney, C. O.	Gastonia
Dixon, Guy E.	Hendersonville
Dixon, W. H.	Ayden
Dunn, W. L.	Asheville
Edwards, B. O.	Asheville
Elliott, W. F.	Lincolnton
Flack, Roswell E.	Asheville
Fleming, M. I.	Rocky Mount
Ferguson, R. T.	Charlotte
Foster, John F.	Sanford
Gage, L. G.	Charlotte
Garrison, D. A.	Gastonia
Gibbon, J. W.	Charlotte
Goodman, A. B.	Lenoir
Greene, Thos. M.	Wilmington

Griffin, W. Ray	Asheville
Halford, J. W.	Lillington
Harper, J. H.	Snow Hill
Highsmith, J. F.	Fayetteville
Highsmith, Seavy	Fayetteville
Holt, Wm. P.	Duke
Houser, O. J.	Charlotte
Hovis, L. W.	Charlotte
James, W. D.	Hamlet
Johnson, Bayard C.	Bunn
Justice, Zora K.	Davidson
Kapp, Henry H.	Winston-Salem
Kennedy, John P.	Charlotte
Laughinghouse, C. O'H. (Hon.)	Greenville
Lawrence, Chas. S.	Winston-Salem
Long, J. W.	Greensboro
Love, Bedford E.	Roxboro
Mann, I. T.	High Point
Manning, J. M.	Durham
Marriott, H. B.	Battleboro
Martin, M. S.	Mount Airy
Martin, W. F.	Charlotte
Miller, O. L.	Charlotte
Mills, C. H. C.	Charlotte
Montgomery, Harry M.	Burlington
Moore, Alex W.	Charlotte
Monroe, H. Stokes	Charlotte
Monroe, J. P.	Sanford
Munroe, J. P. (Hon.)	Charlotte
Myers, Alonzo	Charlotte
McCampbell, John	Morganton
MacConnell, John W.	Davidson
McKay, Hamilton W.	Charlotte
McLeod, Gilbert	Carthage
McNairy, C. Banks	Kinston
McNairy, Caroline	Lenoir
MacNider, W. deB. (Hon.)	Chapel Hill
McPherson, Chas. W.	Burlington
McPherson, S. D.	Durham
Nalle, Brodie C.	Charlotte
Nisbet, W. O.	Charlotte
Noell, R. H.	Rocky Mount
Norris, Henry	Rutherfordton
Northington, J. M.	Charlotte
Orr, Chas. C.	Asheville
Parker, J. R.	Burlington
Pepper, J. K.	Winston-Salem
Perry, H. G.	Louisburg
Pittman, R. L.	Fayetteville
Pritchard, A. T.	Asheville
Proctor, Ivan M.	Raleigh
Ray, John B.	Leaksville
Royster, Hubert (Hon.)	Raleigh
Roberson, Foy	Durham
Sample, R. C.	Hendersonville
Shirley, H. C.	Charlotte
Sikes, G. T.	Creedmore
Shore, C. A.	Raleigh
Sloan, David B.	Wilmington
Sloan, Henry L.	Charlotte
Small, Victor R.	Clinton
Smith, Owen	High Point
Smith, O. F.	Scotland Neck
Smith, C. T.	Rocky Mount
Sparrow, Thos. D.	Charlotte
Spencer, W. O.	Winston-Salem
Stanton, D. A.	High Point

Stevens, M. L.	Asheville
Street, M. Eugene	Glendon
Tayloe, David T. (Hon.)	Washington
Tayloe, David T., jr.	Washington
Taylor, F. R.	High Point
Taylor, W. L.	Oxford
Terry, W. C.	Hamlet
Thomas, W. N.	Oxford
Thompson, Cyrus	Jacksonville
Thompson, S. R.	Charlotte
Todd, L. C.	Charlotte
Townsend, M. L. (Hon.)	Raleigh
Tuttle, Reuben	Walnut Cove
Vann, J. R.	Fayetteville
Vernon, J. W.	Morganton
Walters, Chas. M.	Burlington
Way, J. H. (Hon.)	Waynesville
Weathers, Bahnson	Roanoke Rapids
Whisnant, A. M.	Charlotte
Whittington, W. P.	Asheville
Williams, James M.	Warsaw
Willis, B. C.	Rocky Mount
Williams, William R.	Richlands

South Carolina

Allison, J. R.	Columbia
Baker, A. E. (Hon.)	Charleston
Baker, A. E., jr.	Charleston
Barron, W. R.	Columbia
Black, H. R.	Spartanburg
Black, H. S.	Spartanburg
Black, S. O.	Spartanburg
Black, W. C.	Greenville
Blackmon, W. R.	Rock Hill
Blanchard, F. A.	McColl
Bolt, J. L.	Easley
Brackett, Wm. E.	Whitmire
Bunch, G. H.	Columbia
Carpenter, E. W.	Greenville
Cash, J. B.	Chesnee
Cannon, Jos. Henry	Charleston
Cathcart, R. S. (Hon.)	Charleston
Chamberlain, O. B.	Charleston
Claytor, Hubert	Hopkins
Copeland, J. L.	Ehrhardt
Curry, James W.	Greenville
Davis, T. McC.	Greenville
Edgerton, N. Bruce	Columbia
Earle, B. F.	Greenville
Earle, C. B.	Greenville
Fennell, W. W. (Hon.)	Rock Hill
Ferguson, W. D.	Laurens
Finger, Jas. Avery	Charleston
Finney, Roy E.	Gaffney
Furman, Davis (Hon.)	Greenville
Guerry, LeGrand (Hon.)	Columbia
Horger, E. L.	Columbia
Hughes, R. E. (Hon.)	Laurens
Jefferies, J. L.	Spartanburg
Jewell, J. P.	Piedmont
Johnson, F. B.	Charleston
Jordan, Fletcher	Greenville
Kinney, John F.	Bennettsville
Kollock, Chas. W. (Hon.)	Charleston
Lyles, W. B.	Spartanburg
McInnes, G. Fleming	Charleston

McIntosh, J. H. (Hon.)	Columbia
McLeod, F. H. (Hon.)	Florence
Mauldin, L. O.	Greenville
Miller, J. H.	Cross Hill
Pollitzer, R. M.	Charleston
Pressly, E. W.	Clover
Pressly, W. L.	Due West
Reeves, T. B.	Greenville
Rhame, J. Sumter	Charleston
Seibels, Robert E.	Columbia
Sherard, S. Baskin	Gaffney
Simpson, W. E.	Rock Hill
Smith, D. L.	Spartanburg
Smith, Hugh	Greenville
Smith, W. A.	Charleston
Smith, Zach G.	Marion
Smith, Herbert	Glenn Springs
Steady, B. B.	Spartanburg
Strait, W. F.	Rock Hill
Stuart, Gordon C.	Eastover
Stucky, H. M.	Sumter
Taft, A. R.	Charleston
Thompson, Geo. E.	Inman
Timmerman, W. P.	Batesburg
Tripp, C. M.	Easley
Walker, C. M.	Westminster
Walker, R. R.	Laurens
Wallace, Wm. R.	Chester
Ward, W. B.	Rock Hill
Weinberg, Milton	Sumter
Whaley, E. Mikell	Columbia
Wilkinson, Geo. R.	Greenville
Williamson, J. W.	Hartsville
Wilson, Robt., jr.	Charleston
Wolfe, H. D.	Greenville
Wyman, M. H.	Columbia
Zimmerman, W. T.	Spartanburg

Virginia

Anderson, Paul V.	Richmond
Barker, W. C.	Buchanan
Baughman, Greer	Richmond
Bear, Joseph	Richmond
Belt, H. S.	South Boston
Blackwell, Karl S.	Richmond
Brown, George W.	Williamsburg
Bryan, Robt C. (Hon.)	Richmond
Brown, Alex G., jr.	Richmond
Buck, W. W.	Rural Retreat
Burke, M. O.	Richmond
Buxton, J. T.	Newport News
Call, Manfred	Richmond
Carrington, C. V.	Richmond
Carter, Wade H.	East Radford
Caudill, E. L.	Narrows
Caudill, W. C.	Pearisburg
Chaffin, W. W.	Pulaski
Chitwood, E. M.	Wytheville
Coleman, C. C.	Richmond
Cosby, L. F.	Abingdon
Culpepper, James H.	Norfolk
Darden, O. B.	Richmond
Davis, J. S.	University
Davis, J. W.	Lynchburg
Davis, Paul	Roanoke
Dillard, J. W.	Lynchburg

Brewry, W. F.	Petersburg	Peyton, Chas. E. C.	Pulaski
Driver, W. E.	Norfolk	Porter, W. B.	Roanoke
DuBose, R. H.	Roanoke	Powell, W. L.	Roanoke
Dunn, John W.	Richmond	Preston, Robert S.	Richmond
Ennett, N. Thomas	Richmond	Price, L. T.	Richmond
Fowlkes, C. H.	Richmond	Rawls, J. E.	Suffolk
Fuqua, W. B.	Radford	Rawls, J. L.	Suffolk
Gale, S. S. (Hon.)	Roanoke	Righter, Frank P.	Richmond
Gayle, E. H.	Portsmouth	Rinker, F. C.	Norfolk
Gayle, R. F., jr.	Richmond	Robertson, L. A.	Danville
Geisinger, Joseph F.	Richmond	Robins, Charles R.	Richmond
Giesen, J. J.	Radford	Rogers, W. R.	Bristol
Gill, W. W.	Richmond	Royster, J. H.	Richmond
Goodwin, W. H.	University	Rucker, M. P.	Richmond
Graves, K. D.	Roanoke	Sherrill, Z. V.	Marion
Graves, S. H.	Norfolk	Showalter, A. M.	Cambia
Gray, A. L.	Richmond	Smith, Dudley C.	University
Hall, George C.	Richmond	Smith, James H.	Richmond
Hall, J. K.	Richmond	Spencer, H. B.	Lynchburg
Hamlin, P. G.	Richmond	Stephens, Albert C.	Barren Springs
Hamner, J. L.	Mannboro	Strickland, J. T.	Roanoke
Harnsberger, S.	Warrenton	Surratt, Isaac W.	Belspring
Harrell, D. L.	Suffolk	Talley, D. D., jr.	Richmond
Harrison, V. W.	Richmond	Terrell, E. H.	Richmond
Hazen, Chas. M.	Bon Air	Trent, J. P.	Farmville
Hedges, H. S.	University	Tucker, B. R.	Richmond
Henderson, E. H.	Marion	Turman, A. E.	Richmond
Henson, J. W.	Richmond	Twyman, D. N.	Appomattox
Hill, Emory	Richmond	VanderHoof, Douglas	Richmond
Hodges, Fred M.	Richmond	Vaughan, Warren T.	Richmond
Hodges, J. Allison (Hon.)	Richmond	Watts, S. H.	University
Hopkins, William B.	Richmond	Weindel, W. J.	Marion
Horsley, J. S.	Richmond	Wescott, H. H.	Melfa
Howle, Paul W.	Richmond	White, Joseph A. (Hon.)	Richmond
Hughes, T. E.	Richmond	Whitman, William R.	Roanoke
Hughes T. J.	Roanoke	Wiley, R. M.	Salem
Hunter, J. W., jr.	Norfolk	Williams, Carrington	Richmond
Hutcheson, J. M.	Richmond	Williams, L. L., jr.	Richmond
Hutton, Thomas D.	Glade Spring	Willis, Murat	Richmond
Jameson, Waller	Roanoke	Wilson, Franklin D.	Norfolk
Johns, Frank S.	Richmond	Wolfe, J. B.	Coeburn
Johnson, Marcellus A., jr.	Roanoke	Woolling, R. M.	Pulaski
Johnston, H. G.	Pearisburg	Wright, George A.	Abingdon
Jones, Thos. D.	Richmond	Wright, R. H.	Richmond
Jones, A. P.	Roanoke		
Keyser, L. D.	Roanoke		
King, J. C.	Radford		
Leigh, Southgate (Hon.)	Norfolk		
Lewis, Charles H.	Dumbarton		
McCabe, W. O.	Thaxton		
McGavock, E. P.	Richmond		
McGuire, Stuart (Hon.)	Richmond		
McKinney, Joseph T.	Roanoke		
Mason, H. N.	Richmond		
Mauck, H. Page	Richmond		
Maxwell, Geo. M.	Roanoke		
Michaux, Stuart	Richmond		
Miller, C. M.	Richmond		
Miller, James W.	Pembroke		
Mitchell, Robert E.	Richmond		
Nelson, Garnett	Richmond		
Newman, R. H.	Montvale		
Noblin, J. A.	East Radford		
Nuckols, M. E.	Richmond		
Oglesby, N. P.	Max Meadows		
Payne, R. L.	Norfolk		
Peple, W. L.	Richmond		

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Warren, W. E. Williamston
J. DeCosta Highsmith, The Highsmith Hospital

Fayetteville, N. C.

Twenty-Seventh
Annual Session
of the
TRI-STATE MEDICAL
ASSOCIATION
of the
CAROLINAS
and
VIRGINIA

*"He that walketh with wise men shall
be wise."*

Richmond, Virginia

February 18-19

1925

OFFICERS—SESSION 1925

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Vice-President

Dr. Garnett Nelson.....Richmond, Va.

Vice-President

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Dr. W. R. Wallace.....Chester, S. C.

Three Year Term

Dr. W. B. Porter.....Roanoke, Va.

Dr. F. B. Johnson.....Charleston, S. C.

Dr. E. S. Boice.....Rocky Mount, N. C.

Reporter

Miss Mary Robinson.....Raleigh, N. C.

PROGRAM

Wednesday, February 18th, 10 A. M.

Place of Meeting

Jefferson Hotel

The Association will be called to order by Dr. C. C. Coleman, President of the Richmond Academy of Medicine.

President's Address—Dr. F. H. McLeod, Florence, South Carolina.

PAPERS AND DISCUSSIONS

"Study of the Functional Capacity of the Kidneys: Significance of Slight Deviation from Normal," by Dr. Warren T. Vaughan, Richmond, Virginia.

"Renal Infections as a Complication of Pregnancy," Dr. W. Calhoun Stirling, Washington, District of Columbia.

"John Nottingham Upshur—An Appreciation"—by Dr. J. Howell Way, Waynesville, North Carolina.

"Hyperprostatic Surgery," by Dr. N. Bruce Edgerton, Columbia, South Carolina.

"Calcareous Changes Which Take Place in the Prostate Gland"—(True Prostatic Calculi Illustrated by Case Reports) (Lantern Slides), by Dr. Hamilton W. McKay, Charlotte, North Carolina.

"Our Present Knowledge of the Cause of Urinary Calculi," by Dr. Linwood D. Keyser, Roanoke, Virginia.

"Treatment of Ureteral Stone," by Dr. A. J. Crowell, Charlotte, North Carolina.

1:00 P. M.—Luncheon

2:30 P. M.—Afternoon Session

"A Study of the Toxic Effect of Certain Alcoholic Beverages on the Kidneys," by Dr. W. deB. MacNider, Chapel Hill, North Carolina.

"Presentation of a New Perineal Elevator," by Dr. Charles Y. Bidgood, Richmond, Virginia.

"Surgery of Mesenteric Injuries with Reference to Intestinal Viability Based on Clinical and Experimental Evidence"—(Lantern Slides), by Dr. T. C. Bost, Charlotte, North Carolina.

"Tuberculosis of the Spleen—with Report of a Case Complicated by Massive Gastric Hemorrhage"—(Lantern Slides), by Dr. George H. Bunch, Columbia, South Carolina.

"Sacral Nerve Block Anesthesia," by Dr. J. DaCosta Highsmith, Fayetteville, North Carolina.

"Consideration of the Thyroid Disorders," by Dr. S. O. Black, Spartanburg, South Carolina.

"A Resume of the Pathology and Surgical Treatment of Chronic Peptic Ulcer"—(Lantern Slides), by Dr. James W. Gibbon, Charlotte, North Carolina.

6:00 P. M.—Dinner

8:30 P. M.—Evening Session

"Bacterial Endocarditis," by Dr. W. S. Thayer, Baltimore (Invited guest.)

"Syphilis of the Stomach," by Dr. John A. Hartwell, New York City (Invited guest.)

"Chemotherapy and the Treatment of Syphilis"—(Lantern Slides), by Dr. Wade H. Brown, New York City (Invited guest.)

THURSDAY, FEBRUARY 19th, 10 A. M.

Morning Session

"Prophylaxis of Valvular Heart Disease," by Dr. F. C. Rinker, Norfolk, Virginia.

"On the Prevention of Eclampsia," by Dr. Ivan Procter, Raleigh, North Carolina.

"A More Satisfactory Treatment of Narcotic Drug Addiction Cases," by Dr. W. C. Ashworth, Greensboro, North Carolina.

"The Family Physician, the Home, and Child Welfare," by Dr. N. Thomas Ennett, Richmond, Virginia.

"The Treatment of Tuberculous Empyema," by Dr. F. S. Johns and Dr. Dean B. Cole, Richmond, Virginia.

"The Diagnosis of Malignancy," by Dr. S. W. Budd, Richmond, Virginia.

1:00 P. M.—Luncheon

2:30 P. M.—Business Session

Election of Officers

"Treatment of Suppurative Appendicitis," by Dr. Southgate Leigh, Norfolk, Virginia.

"Enterospasm," by Dr. Robert C. Bryan, Richmond, Virginia.

"The Medical Treatment of Exophthalmic Goiter," by Dr. Stuart McGuire, Richmond, Virginia.

5:30 P. M.—Adjournment

Information

The Jefferson Hotel will be official headquarters of the Association. All the papers will be read and discussed in one section in the Auditorium of the Hotel. There will be ample time for the presentation of each topic, and it is earnestly hoped that the discussions may be pertinent, concise, and clear.

A copy of each paper read should be left with the secretary. All the papers and the discussions will appear from month to month in the official organ, Southern Medicine and Surgery. The Editor of the official organ will be at the meeting and he will be glad to hear opinions about the Journal, favorable and unfavorable.

Section 9. "Not more than twenty

minutes will be occupied in reading any paper, except by vote of the Association. In the discussion of papers, resolutions or questions, no member shall speak longer than five minutes nor more than twice on the same subject, except by special permission by vote of the Association."

At the business session Thursday afternoon the following officers will be elected: the president from Virginia; a vice-president from each of the three states; the secretary-treasurer from any one of the three states. All these offices are filled by election in the general meeting of the Association. The three vacancies on the Executive Council are filled by the Council.

The Association will meet in 1926 in North Carolina. The Executive Council at its meeting on Wednesday evening, the time and the place of which will be announced, will be glad to receive and to act upon invitations with reference to the next meeting place.

A lantern with an operator will be available throughout the meeting for use of those who wish to illustrate their papers by slides.

The members of the Association who reside in Richmond will serve as a Committee of Welcome.

The Alumni of the Medical College of Virginia will banquet at 6:30 on Wednesday evening at the Commonwealth Club.

The former presidents of the Association will meet at their annual dinner at 6:30 Wednesday evening at the Commonwealth Club.

Members of the Association will render humanity a beneficent service by giving earnest attention to the subjects discussed during the meeting; they will do their fellow-physician a good deed in bringing him to the meeting.

The present meeting promises to be a scientific assemblage—without distraction or diversions.

F. H. McLeod, M.D., President,

Florence, South Carolina.

Jas. K. Hall, M.D.,

Secretary-Treasurer,

Richmond, Virginia.

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Washington, D. C.—The Department of Commerce announces slightly higher death rates of mothers from childbirth or puerperal causes in 1923 than in 1922.

For the 10 States and the District of Columbia (constituting the "Birth Registration Area" of 1915), the death rate from puerperal causes in 1923 was 6.4 per 1,000 live births as compared with 6.2 in 1922, 6.5 in 1921, and 6.1 in 1915.

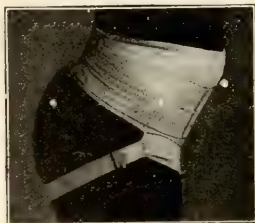
Of the States for which figures are available for 1923 and 1922, 14 show higher rates from puerperal causes in 1923. South Carolina has the highest 1923 death rate from puerperal causes (9.7 per 1,000 live births), and Utah the lowest (5). Separate rates for the white and colored are shown for only the six States of Kentucky, Maryland, Mississippi, North Carolina, South Carolina, and Virginia. For 1923 the highest rate for the white appears for South Carolina (7.4), and the lowest (5.4) for both Kentucky and Maryland, while for the colored the highest rate (15.4) is for Kentucky, and the lowest (8.3) for Maryland.

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Dr. J. W. Long, Greensboro, N. C., will pay liberally for copies of the Transactions of the North Carolina Medical Society for the years 1877, 1878 and 1880.

Southern Medicine and Surgery

VOL. LXXXVII

CHARLOTTE, N. C. MARCH, 1925

No. 3

Opening Exercises

The Tri-State Medical Association of the Carolinas and Virginia met in the auditorium of the Jefferson Hotel, Richmond, Wednesday, February 18, 1925, at 10:30 a. m., and was called to order by the Secretary-Treasurer, Dr. James K. Hall, of Richmond. Dr. Hall then introduced Dr. C. C. Coleman, President of the Richmond Academy of Medicine, who spoke as follows:

As president of the Richmond Academy of Medicine and Surgery I take great pleasure in extending to the Tri-State Medical Association of the Carolinas and Virginia and its individual members and guests a most cordial welcome to Richmond. We hope that you will derive as much pleasure from this meeting as it gives us to have you for our guests, and if there is anything we can do while you are here to contribute

to the success of this meeting we shall take great pleasure in doing it.

I have been particularly struck by the fact that your program provides for prompt attention to the scientific subjects. I may say here that our own society during the last year, largely as the result of the efforts of your Secretary, an ex-president of our society, has adopted a similar change in the program and has eliminated largely everything but scientific discussions. As a result we have noted an improvement in attendance and interest. For fear that I might transgress, I now declare the Tri-State Medical Association opened, and take great pleasure in introducing to you your President, Dr. F. H. McLeod, of Florence, S. C.

President's Address

The Effects of Present-day Medical Education on the Rural Physician*

F. H. McLEOD, M.D., *Florence, S. C.*

Permit me to again express my deep appreciation of the very distinct honor you have conferred on me in making me your president. The wisdom of your choice is to be questioned, but not the character of the appreciation I have for the honor.

On this occasion it might be fitting to refer to the proud achievements of the Tri-State Medical Association and of the wisdom of its founders in its establishment twenty-seven years ago. The reason given by its founders for its establishment were:

- (a) The advancement of Medical Science.
- (b) The elevation of the profession.

(c) The promotion of all means for the relief of suffering humanity.

This was the creed with which it was christened and it has kept the faith.

No more fortunate geographical division could have been found available for a medical association than the states of Virginia and the Carolinas, whose people and descendants are of one common colonial ancestry,—a people who have the same ideals and traditions. Time has not changed them and no invasion of cosmopolitan populations has influenced them. The long and distinguished list of leaders that Virginia and the Carolinas have furnished the nation and the world, not only in the profession of

medicine, but in political and business activities, is a pleasing reflection of what our forefathers accomplished. They were pioneers in the development of modern medicine; they were leaders in the pre-scientific medical era. The older schools of Doctors were unacquainted with our present-day method of diagnosis, and had to depend upon physical examinations alone, in which they excelled, however, to a marked degree; and it is not unreasonable to regard them as having weird diagnostic acumen. They had no laboratories, no blood pressure apparatus, x-ray or any of the now so necessary equipment of the diagnostician of today, without which all of us would be hopelessly lost.

This Society stands for scientific medicine, but not for the indifferent scientific attitude in which the patients' interests are forgotten. It stands for the promotion of all means for suffering humanity, a lofty ideal, the synonym of service. Would it not delight Hippocrates could he today appear in this convention hall and find this body of men bonded together in a spirit of co-operation, working for the relief of suffering humanity?

The intense, earnest interest taken by both old and young members, its informality and good fellowship, have clearly made the Tri-State's existence worth while. The highly practical and scientific character of the proceedings have been real post-graduate education, and no man can attend one of these meetings, or that of any other medical society, and not go home a better doctor, able to do more for those who come under his care. Who of us cannot recall useful and helpful facts learned from the reading of the papers and the brilliant discussions, and absorb inspiration from the close-up contact with each other. The messages brought, not only by our distinguished visitors, but our own fellow-members, tend to uplift and give us encouragement and zeal in the work we, ourselves, are doing.

Two full days are given to a strictly scientific program. The number of papers on the program have been reduced

to twenty. Personally, I question the wisdom of this, and do not believe that we should limit the papers to less than forty, even though it takes longer than two days to read them. Possibly it might be necessary to read some of them by title, but they would appear in our excellent organ, "Southern Medicine and Surgery," splendidly edited and an ardent exponent of Southern medicine. The papers would not get the same publicity as those that were read on the convention floor, but every listed paper on the official program should be read if not in person by title. The Tri-State Medical Association desires to leave no opportunity undone to promote the purpose of its organization. We should institute an active campaign for new members if we desire to extend the influence of this Society. An active field agent could perhaps secure many renewals and many new members at a reasonable cost.

The relationship of present day medical education to the exodus of rural physicians is a question of sufficient importance to occupy our attention and to give us more or less serious concern, and especially so when the recent medical graduate no longer desires to locate in other than larger towns and cities.

I would not, in any way, criticize present-day medical education. The requirements for admission to a class A medical school are not too high. The medical curriculum is not unreasonable and a year of hospital work should be required. This is not too much to ask of the man who would equip himself properly for the work at hand. There are many of us present who had no such opportunities, but how much better it would have been for us and our patients if we had. Many things were taught us but others had to be learned from experience.

The many years of active work of the profession at large, the Council on Medical Education, and the Carnegie Foundation for the advancement of teaching, have resulted in our present-day high standard.

I would not change our present-day

educational methods, even though they may be responsible to a large extent for the making of a different class of doctors from those we formerly had. The medical graduate of today does not seem inclined to want to locate in the rural community after having given so long a time to his preparation. Much has been said and written on this subject and you have, doubtless, read the interesting articles by Dr. Pusey, President of the American Medical Association, now appearing in the *Journal*. He frankly states as his opinion that the pre-medical requirements should be reduced.

I have obtained the following facts from the survey made by the General Board of Education:

In 1904 medical education reached its highest number. There were 160 medical colleges in this country,—more than half of the world's supply, and 26,147 students and 5,747 graduates. In 1924 there were 79 or 80 schools, 17,728 students and 3,562 graduates. In 1904 approximately a graduate for every 13,000 inhabitants; in 1924 one for every 30,000,—a decrease of over 50 per cent.

Virginia has two medical schools and South Carolina one. They have proud and honorable records. North Carolina has two, two-year schools, one headed by our beloved McNider,—both doing excellent work, and whose students give a great account of themselves in other schools wherever they go for their third and fourth years.

Of 11,902 graduates from all schools for the period from 1916-1920, approximately 18 per cent have located in communities of 2,500 or less, and 55 per cent in cities of over 100,000. In Virginia during the same period there were 324 graduates,—22 per cent of whom located in communities of 1,000 or under. In South Carolina for the same period there were 79 graduates and 21 per cent of them have located in communities of 1,000 or less. These figures of 22 per cent and 21 per cent are startling, when it is remembered that many of these men probably came from the smaller communities.

In North Carolina in 1912 59.2 per cent of her doctors lived in communities of 1,000 or less; in 1923 thirty per cent. The exodus of physicians from rural to urban communities began in 1916 and only slowed up in 1921, but still continues.

I know of no communities totally deprived of doctors, but I do know of many who want doctors and more doctors and I also know but a very few recent graduates who have located in rural communities. No one seems to be able to assign a specific cause for this condition of affairs and I shall not attempt.

The record of the general practitioner of today, whether he be from town or country, is that he is able to take care of himself and he needs no apology. In this day of specialism the up-to-date practitioner is the greatest of all specialists. Mr. J. Basil Hall, recent president of the British Medical Society said:

"To the layman the term 'specialist' had become a cabalistic word which he repeated on every possible occasion. There was, however, one specialism which he frequently failed to appreciate at its proper value,—the specialism of general practice. It required more knowledge of human nature and more experience over a wide field of observation to make a first-class general practitioner than the public had any cognizance of. Clinical observation threatened to become a lost art, and radiography and all the modern scientific methods were good servants, but bad masters. Their present failing was an overconfidence in modern technic and a lack of the appreciation of the value of that wisdom which could be obtained only by personal observation and experience. He urged those of the younger generation to think more and observe more for themselves, as their forefathers did, and not be so ready to bow the knee in a fanatical worship of so-called scientific methods of investigation. Experience begotten by patient observation would teach them the real value of scientific methods, and their limitations."

Could it be that those of us who are privileged to deal with referred cases have forgotten the rights of the doctor at home? This is perhaps easy to do, in view of the fact that many patients have exaggerated the real work of the specialist and perhaps already may have mistrust for the home physician.

Could it be true that stories of fabulous fees and large incomes of the city doctors have been the cause of his dissatisfaction? But whatever the cause for his migration, the city is better for his having been a country doctor, even though he has not had a laboratory at his command and help always in easy reach. His very isolation has required the best that there was in him and impressed upon him valuable experiences which are rich endowments to his equipment.

Medical education today is certainly beyond the means of many poor boys. Our Southern schools have had but few legacies, and such as we have are used for better schools and better equipment. The medical profession has served its constituency well, not only in caring for the ill, but equally as well as sanitarian; and the intelligent public of today must realize that there has been added ten years or longer to their lives.

It would be unwise to advocate the education of too great a number of doctors, but our rural districts must not be depleted of doctors and there is probably no other way by which we can get them other than for the State to lend aid to poor boys who would undertake the study of medicine and in turn compensate by agreeing to locate for periods of five to ten years in rural districts. I quote again:

"The causes assigned for this condition have been various; but certain factors related to the changes in medical education which have come about in the last ten or fifteen years have been charged with a large measure of responsibility,—in some discussions, indeed, with sole responsibility. It has been alleged first, that one reason why there are too few doctors in the rural areas is that there are too few in the country

as a whole, in consequence of the fact that too few are being produced by the medical schools under the current regime of high entrance requirements and prolonged course of study; and second, that even were their numbers adequate, the present-day medical graduates would refuse to locate in or near the rural areas. * * * * * Anyone who seeks to apply to the rural medical problem a solution which increases the supply of physicians uses a two-edged sword, one, moreover, quite unwieldy and unmanageable. On the other hand, any solution of the rural medical problem which makes rural practice more attractive and so draws or diverts practitioners to it from the towns, is twice-blessed; it blesses the town that gives no less than the countryside that takes. No consideration of the problem can be deemed truly comprehensive which, in asserting the right of the country people to adequate medical service, disregards the right of the city people to be protected against the inevitable evils of an overcrowded medical profession. * * * * * Whatever may be thought, therefore, of the necessity for taking measures to meet the problem of rural medical service, it seems clear that the situation does not call for any present action in the field of medical education in the direction of a reduction in requirements or a lowering of standards."

Your attention has been called to this important matter and it deserves more than passing notice. The Tri-State Medical Association is not a political organization and has no concern other than in scientific medicine. It is as individuals that our interest may be exerted and would it not be wise to give serious thought to such changes in our present-day medical educational systems as would insure the better protection of the rural population, and the making of more general practitioners?

Our present standard should not be lowered. Our medical schools need more support, more room, more teachers, more laboratories, and we can continue to help them get what they need. While one does not desire State medicine, yet

State aid for the poor boy who would undertake the study of medicine may be

his only chance, and certainly a very commendable way to aid suffering humanity.

John Nottingham Upshur, M.D., An Appreciation*

JOSEPH HOWELL WAY, M.D., *Waynesville, N. C.*

John Nottingham Upshur, M.D., worthy son of Virginia, scion of one of the first families of the Old Dominion, was born in Norfolk, Va., Feb. 14, 1848; the son of George Littleton, and Sarah Andrews (Parker) Upshur. His earlier schooling was received at the Norfolk Military Academy, and later he was sent to the Virginia Military Institute. A good student in each school, it was from the latter place that in the perilous days of 1864, at the youthful age of sixteen, he won immortal renown as one of the two hundred and fifty student cadets from this famous institution, who by special permission of the faculty, on the fifteenth of May, participated in the battle of New Market with a resulting casualty list of fifty killed and wounded on the field. En passant, it is pleasing, especially to one who appreciates and respects the army of our country, to recall the story of Jackson's seasoned veterans after the bloody conflict when bivouacked on a field not far away, expressing a desire to see the school boys who had so valiantly fought like seasoned veterans of the war, and going in large numbers in the direction of where the soldier lads were entrained under orders to return at once to school, met many of the young tigers, who actuated by the desire to see Stonewall Jackson's men, were going in the direction of their encampment. But young John Upshur was not permitted to enjoy this meeting with its friendly greetings, for he was numbered among the wounded at the battle of New Market. Recovering from his wound he continued his studies at the V. M. I. with the others of this glorious company of young Southrons who had only been excused from school duties time enough to win immortal fame and write

another page in the history of American young manhood.

Later he pursued his studies at the University of Virginia, and also at the Medical College of Virginia here in Richmond, and from the latter institution received the degree of Doctor of Medicine in 1868, a few days following his twentieth birthday.

Locating in Richmond in 1869, he engaged in the general practice of his chosen profession, continuing actively for the ensuing fifty-five years; dispensing sunshine in shadowy places, relieving human suffering, and with kindly spirit, filled with the libation of service to his fellowman, exemplified in finest degree the splendid character of gracious friend, of manly man, of patriotic citizen, and of capable physician.

He was married in 1873 to Miss Lucy T. Whittle, an accomplished lady of Richmond, Va., who lived only a short time. In 1879 he wedded one of Baltimore's most charming women in the person of Miss Elizabeth S. Peterkin, who with his five children survives him: Dr. William P. Upshur, Major M. C., U. S. Army; Dr. Alfred P. Upshur, Major M. C., U. S. Army; Dr. Francis W. Upshur, a well known physician of Richmond, Va., another son, and a daughter, the wife of Mr. Geo. J. Benson, of this city also.

It was Dr. Upshur's good fortune to embody within his psychic make-up those fine qualities, not always possessed by all medical men of great learning and ability, which enabled him to fittingly adjust himself in so many places in the affairs of men and women, as always well becomes the general practitioner of medicine. He was ever a loyal and a patriotic citizen ever ready to respond to the call of civic demands upon

his time, patience, and means as well. His it was to serve the Episcopal church, of which he was a devoted communicant through the many years of his life, with an intelligence and fidelity fully equal to that given his country as soldier and citizen, or his much-beloved profession when carrying its many weighty responsibilities. His was essentially a well-balanced and a symmetrically proportioned human life.

In politics he was a democrat, and politically minded (as he was religiously or professionally) a man of positive convictions, and willing to promptly assume and maintain his conscientious beliefs on any phase of questions coming before him. He was a loyal Mason, a Knight Templar, and 32° Scottish Rite. In 1903 at the age of fifty-five years, it afforded him great satisfaction to represent the New Market Corps, in delivering an address entitled "Virginia Mourning Her Dead," at the unveiling of Memorial Statue.

As a rule physicians who become potential factors in the affairs of the profession begin early in their careers to manifest active interest in medical matters, and Dr. Upshur was no exception to this rule, just two years after graduation in medicine, we find him becoming a charter member and taking part in the organization of the Medical Society of Virginia in 1870. He was a regular attendant on its annual sessions, a frequent contributor to its excellent transactions, and enjoyed the supreme honor of its presidency in 1902. Always actively practicing his profession, and concerned in many things of interest to his clientele, devoted to his books and journals, he yet found time to write occasional articles for the medical press, and in 1886 published a small volume of helpful and intensely practical nature, entitled "A Manual of the Disorders of Menstruation."

In 1884 he assumed the duties of the chair of *Materia Medica* and Therapeutics in his alma mater and discharged the duties of the position until 1896 when he was called to the chair of Practice of Medicine.

In 1899 Dr. Upshur participated in the organization of the Tri-State Medical Association of the Carolinas and Virginia as a charter member, and the following year he became secretary-treasurer. At the meeting of the Tri-State in Richmond in 1901 he was chosen President, presiding at the Asheville session of 1902, and to the end of his life cherishing an abiding and helpful interest in the perpetuity and prosperity of this association, almost always present and contributing to the program as well as ever encouraging the younger men of the profession to engage actively in the constructive affairs relating to medicine and surgery. Such briefly, is a too short account of the life of this good man, as I, his pupil in the Medical College of Virginia in the session of 1884-85, saw him and measured. His was not an intellect of wonderful proportions, nor were his accomplishments those of the superman—and I am glad they were not, for if it were so, he and his deeds would tower so far above our common visage their value as an example for us would be negated. The world is the better for the life of Doctor John Upshur, the standards of his profession were lifted and carried upward by his effort, and his ideals live after him to inspire.

His work is ended; and so today, we, his friends, in kindly thought view his fine helpful career rendering appropriate tribute of respect and affection for his memory. In his passing, a good man has gone, a wise, earnest, and capable physician is no more, a patriotic citizen is lost to the state, and a loving husband and kind father is missed and mourned.

"I saw the mountain stand
Silent, wonderful and grand,
Looking out across the land
When the golden light was falling,
On distant dome and spire;
And I heard a low voice calling,
'Come up higher, come up higher
From the low land and the mire,
From the mist of earth desire,
From the vain pursuit of self,
From the attitude of self;
Come up higher, come up higher'."

And John Nottingham Upshur harkened to the voice on December 9th, 1924, and his spirit has wafted back to the place from whence it came, leaving with the world of those who knew him best, a memory sweetly inspiring as that of a man, earnest of purpose, honest of action—the noblest work of GOD.

Discussion

Dr. James K. Hall, Secretary, Richmond:

Dr. Upshur asked me at the Staunton meeting of the Virginia State Medical Society if I thought the younger members of the Tri-State Association would listen to a paper by him and I said

they would be glad to. Within less than a month after that he was lying dead in his Franklin street home. Only a few days ago one of his sons sent out to me Dr. Upshur's file of Transactions of the Tri-State Medical Association. He was a very devoted member of the Tri-State.

At the close of this session, Dr. M. L. Townsend, of Raleigh, N. C., moved that the society stand in silence for one minute in token of the reverence in which they held Dr. Upshur. This motion was seconded and unanimously carried.

Children's Ears, and the General Practitioner*

H. S. HEDGES, M.D., *Charlottesville, Va.*

At a recent meeting of this society the writer discussed the relation of the general practitioner to the eye and its diseases. The fact was emphasized that too often when an eye case is met in general practice the family physician will assume the attitude, "Hands off—I do not know anything about the eye," and tends to excuse himself from the responsibility of treating the case from his lack of knowledge.

Unfortunately the same attitude is too often assumed in regard to diseases of the ear; and yet we feel that we can say without fear of successful contradiction that—especially during the winter months—there is more acute suffering and there are more cases of unexplained high temperature among little children from middle ear involvement than from any other one cause.

And again the successful handling of these cases in the vast majority of children is so simple, and the results so brilliant and immediate, that to neglect to examine a child's ear in every case of unexplained restlessness and fever, and failure to give proper treatment at once either at one's own hands or by referring to competent help, is little short of—I am tempted to say—unpardonable carelessness.

What I wish to emphasize in this brief paper is this—that every practitioner who treats the diseases of children ought to be familiar with the general symptoms of otitis media, and with the appearance of the normal and pathological ear, and be ready to refer intelligently and promptly, or be prepared to treat properly himself.

If, their work being in a city, close to an otologist, they suspect ear trouble and prefer to call a consultant, well and good; but every man in general practice at a distance from competent help ought to be able to easily diagnose and properly treat these cases;—the attitude of "hands off" is not fair to the little sufferer, to the family, or to the physician himself.

It is not fair to the child to subject it to days and days of suffering (which can be so easily relieved), to the dangers of impaired hearing, mastoiditis, chronic aural discharge and even deaf-mutism; it is not fair to the family to subject them to the anxiety and expense of sending to a distant city for an otologist or the pediatricist; it is not fair to yourself to overlook or fail to attempt to relieve a condition which is so easily

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recognized, (in the great majority of cases) so easily treated. So to arouse your interest in these little sufferers, and in an humble way to help you to handle them is my apology for being here today; for I have absolutely nothing new to say.

A few words first about the symptoms. They vary greatly. It is a mistake to suppose that all children suffer pain with acute otitis media. Often the child, especially if quite young, will seem sick, listless and feverish with no appetite for days—and neither mother nor doctor so much as suspect the ears—till suddenly, following a free gush of muco-pus or even a pure watery discharge, the whole picture will rapidly clear up. This is especially the case in poorly nourished children. In these cases the appearance of the drum is our only guide,—hyperemia along the handle of the malleus and periphery, radiating injection of the vessels, cloudiness or yellow discoloration, and finally bulging of the membrane. In other cases in which the children are otherwise healthy the trouble often occurs suddenly with restlessness, constant crying, tremor of the lower jaw and rubbing of the head against the pillow, with temperature running often to 104-106. When unilateral the child is often quiet only when laid on the affected side. In such cases it will often nurse only at one breast. The pain often comes in paroxysms, increasing toward evening or in the night. Between the attacks there may be several hours during which the child will play happily and naturally.

In young children the head symptoms in acute otitis media often reach such a degree of severity before perforation of the drum takes place, that the affection, which often starts with high fever, vomiting, unconsciousness, and convulsions, presents the picture of a meningial infection, or an acute exanthem beginning with brain symptoms. These brain symptoms may be attributed to the numerous anastomatic branches in the ununited sutures, which bring about a communication between the blood vessels of the tympanic and cra-

nial cavities. This latter picture was vividly presented not long ago. After a hard drive of thirty miles into the country—some of the Virginia roads are not yet hard surfaced—I found a child of three years desperately sick after measles and pneumonia, and now almost comatose from what the three doctors in attendance had diagnosed as meningitis, with an absolutely bad prognosis.

They were all good men. Their prognosis was all right; the child presented the classical symptoms of meningitis, and certainly looked as if it could not live long, but not one of them had even tried to look at the ears. Examination showed red, bulging drums. After free incisions the symptoms disappeared as if by magic, and by morning the child seemed almost well. As the father paid the consultant's fee, not a small one for our part of the country, he said, "I never paid a bill more gladly in all my life." In just such a case as this, think how much would have been saved to all concerned if one of the home doctors had only even tried to examine those little ears.

Of course all are familiar with the acute otitis media occurring with the exanthemata, especially measles and scarlet fever. Probably at least fifty per cent of these cases will show trouble. A sudden rise in temperature with pain and restlessness in the latter part of measles or scarlet fever, if pneumonia be excluded, is almost certainly due to this trouble. At any rate no one has the right to attend one of these cases and not keep watch over the ears. The number of cases this winter has been unusually large, with a high percentage of mastoid involvement.

Now to treat these cases one must be reasonably familiar with the normal and pathological drum. Unfortunately many of us are not familiar with the reflecting head-mirror and the aural speculum, but fortunately our good instrument makers are now supplying electrically lighted otoscopes which are so simple and so efficient that no one has a valid excuse for not being able to see an ear, provided he first, if necessary,

takes the trouble to clean out the canal. This is by no means always easy, and yet it must be done thoroughly before we can get any accurate knowledge of the condition of the drum and middle ear. The child's canal is small, in infants there is no bony canal, and the cartilaginous frame work is very delicate so that the sides tend to fall together, and the least little bit of flaky wax can block our vision altogether. This can usually be easily removed by a little smooth ring curette, or by gently syringing with a large soft rubber ear and ulcer syringe, using an air blast from the syringe to dry out the canal after removing the debris. Extreme care should be used not to abrade the canal, or to touch roughly a highly congested drum, else very annoying bleeding may occur that will seriously interfere with our work. If the canal keeps on filling with blood so fast that we cannot see as we should, a little adrenalin dropped into the canal will be of great help. Cleaning the canal is often very painful, especially if there be a developotitis media; for in children under three there is no bony canal, and traction on the tragus or auricle is transmitted directly to the inflamed drum and neighboring structures. With infants it is best to roll them in a sheet as if we were going to intubate, and hold firmly on a hard bed or blanket-covered table. For older children an anesthetic may be needed before we can properly clean the canal. Now after getting the canals clean what are we expected to see? As we draw the auricle downward and backward to get a view of the drum, the membrane seems to lie more horizontally than in the adult, though this is not really the case. The landmarks are not so prominent, but we can easily see the short process of the malleus, with the delicate handle extending downward and backward. The light spot of the child's drum is not quite so well marked as in the adult, and the color is of a more bluish gray. If we see a case in the beginning of an acute catarrhal otitis media, the drum is deeply injected along the handle of the malleus and around the periphery, perhaps especially

up towards Shrapnel's membrane. Luster is slightly lost, and the light spot may be gone altogether. If this picture appears in the course of an ordinary cold, or during measles or scarlet fever with restlessness and high temperature, the safe thing to do is to open the drum at once; though if you are close to the child, cleansing the nose, gentle Politzerization with free catharsis and a little Dover's Powder to control the pain may tide the case over, but often these ears will fill and burst in a few hours. Moreover very often, though not always, after swelling has taken place, the pain ceases to a degree, and the parent thinks that the trouble is over till a free discharge of pus tells a different story. Some of these cases will run for days with no other signs than the marginal and malleolar injection, with almost absolute anorexia, and very high temperature.

I shall never forget a little fellow of three whom we saw away back in the mountains one stormy winter's night. For four days his temperature had run from 104 to 106. The physician in attendance was a good man. He could find no cause for the trouble. Examination showed the above picture, and not very well marked at that. Under chloroform a free incision was made in each drum, a dry cotton wick inserted. There was a little watery discharge in the morning, and in a day or two the child was well.

If we see the child later, the drum may be uniformly red, with or without bulging, with fever and usually pain. On incision we evacuate a muco-purulent or purulent discharge, sometimes tinged with bloody fluid. This may discharge for 24 hours, or for several days, and then stop. Still later the bulging red drum, often covered with a gummy exudate, will be so distended as to obliterate all landmarks, and free creamy pus will well up into the canal as soon as the incision is made. After incision, the canal is wiped dry, a cotton wick inserted down to the opening in the drum with orders that it be left for about an hour. On withdrawing this, any blood

that may have been left about the incision will have clotted in the meshes of the cotton, and will come out with the cotton, leaving the incision clear. This should be replaced, and renewed as often as it becomes saturated with the discharge.

We must not in this paper discuss after treatment; but if the attending physician has recognized the trouble and opened the drum, he has gone a long way toward saving the child, the mother, and himself an endless lot of trouble. Many cases, of course, do not clear so quickly, but the discharge continues, due to involvement of the antrum, and in older children, of the mastoid cells. Hypertrophied adenoids and tonsils keep up the trouble, as the eustachian tube is short and open and infection keeps traveling up into the ear from the throat.

In other cases, all the surrounding cells become involved at once, and we have the serious, acute fulminating mastoid cases. Another type shows a dull reddish grey thickened membrane, like dull parchment. In this type we may see no bulging at all, but if we wipe the drum carefully a macerated layer of epithelium will come away, leaving an angry red drum beneath it. With these ears we often find a lower but persistent and rather irregular temperature. Little discharge may follow the opening, but the temperature will clear up.

Sometimes we see a fiery red drum, with marked blebs, especially near the upper posterior part. Pricking the bleb will show the red, raw drum beneath, and free incision will often give the bloody serum, characteristic of the hemolytic streptococcal cases. These types are sometimes spoken of as "myringitis." I doubt greatly whether such a type really exists; i. e., an inflammation of the tympanic membrane without involvement of the underlying structures of the middle ear. In many of these types showing the bloody blebs, there is a sharp hissing sound of escaping gas as soon as the incision is made. They are bad ears. Some cases with persistent fever will show a white thickened drum. Incision will evacuate thick pus.

If any of these types be recognized,

we feel that the safest thing to do is to make a clean incision in the drum. The swelling is usually in the posterior superior part, and this is fortunately the most accessible portion. The knife is entered above, midway between the handle of the malleus and the posterior border, care being taken not to penetrate so deeply as to wound the membrane on the inner wall of the tympanic cavity. The incision is carried downward in a curving sweep to, perhaps below, the tip of the handle of the malleus, unless there be swelling of the posterior, superior wall. This, in early stages, is found most often in little children and infants. In such cases it is probably best to enter the point below, and to bring it upward and backward deeply into the swollen area.

With infants it is best to hold the head solidly, and operate without anesthetic. In older children we feel that an anesthetic, preferably chloroform, should be given. It is always carried in my satchel at this time of the year; and often in the country away from help the physician must be anesthetizer as well as operator. If you give an anesthetic, especially in little children, in most cases it is best to open both drums, even if the second does not yet show any marked signs. The chances are that in a few hours or a day or two it will, and the whole operation have to be repeated. A careful paracentesis in a clean field does no harm, and often much good if the pathological process has already started. To make the incision easily, we prefer a small, very sharply pointed blade on a long shank. This can be easily used through the electric otoscope, which gives a brilliantly lighted field just where it is needed. Even though no pus or even serum follows the cut, the relief is usually marked.

One has only to see the results to realize the value of early paracentesis; and if these halting remarks will induce even one or two of you who treat children to get an electric otoscope, to study the ear in health and disease, and go ahead and open these little ears when necessary and if in doubt, open anyway, I shall feel that I have not taken your valuable time in vain.

Renal Infections as a Complication of Pregnancy*

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In this report of fifteen cases of infection of the kidney, will be included those cases which have occurred during, and as a result of, pregnancy.

It is the opinion of many writers that renal infection occurring at this time is but an acute exacerbation of a longstanding infection. Holmes says "A careful study of the life history of the patient will elicit recurrent attacks going back even to infancy."

During the last decade more general recognition has been accorded this very serious complication of the pregnant state. Bugbee states, "The renal function is such an important factor during pregnancy that it is right to look on the pregnant woman, in one sense, as a urologic case."

INCIDENCE.

The frequency with which renal infections occur during gestation has not, in the past, been given general recognition. Many cases are incorrectly diagnosed as appendicitis, puerperal sepsis, etc., when a careful history and examination of a catheterized specimen of urine, will in most cases, direct attention to the true cause of the infection. Emge, at Stanford University Medical School, found seven percent of all cases of pregnancy had infection of the kidney. Other investigators have found as high as ten percent of renal infections incident to pregnancy. As a result of the better prenatal care given women at the present time, the diagnosis and recognition of this serious complication, has been more frequently made. DeLee says, "Two-thirds of the patients dying during pregnancy have had pyelitis at some time." It is by the early recognition and treatment of these renal infections, that we can hope to reduce the fetal mortality and maternal morbidity.

ETIOLOGY.

Much dispute exists at the present time

as to the cause of this pathological process. All writers agree that residual urine in the kidney pelvis is the finding most frequently observed. This varies in quantity from twenty to one hundred and fifty c.c. This finding is indicative of ureteral obstruction, with stasis of urine in the kidney pelvis. Braasch, Caulk, Cabot, Danforth, Norris, Thomas and others believe the obstruction to the ureter is the result of pressure by the gravid uterus and fetal parts. DeLee dissents from this opinion and thinks the stasis is due to torsion, elongation and kinking of the ureter as a result of displacement of the pelvic organs. Necropsy findings show that two-thirds of the gravidae reveal marked dilatation of the upper urinary tract, extending down as far as the superior strait. Webster says frozen sections show the uterus in direct relationship with the ureter at the pelvic brim. In two cases in this series, a ureterogram demonstrated complete blocking of the right ureter, as a result of pressure by the uterus and fetal parts. Primiparae are more prone to renal infection than multipara, possibly due to the greater abdominal pressure, diastasis of the recti muscles being less pronounced. From the fifth to the eighth month, is the most frequent period for this infection to arise. The pressure in the kidney pelvis and ureter is approximately ten mm. of mercury, showing that very little pressure is required to block the outflow of urine. There is nothing so conducive to infection in the urinary tract, as stasis of urine, from lack of drainage. Disregarding the post-mortem findings, it has been definitely determined that a great majority of pregnant women have urinary retention in the kidney and ureter. The study of any large series of cases will corroborate this statement. Whether the obstruction is due to pressure on the ureter; torsion and elongation; swelling and edema of the lower ureteral mucosa;

or a stricture,—which Hunner found in thirty-four of thirty-five cases,—has not been conclusively determined. I am of the opinion that pressure is the chief offender, with congestion and swelling of the lower ureter, a contributory cause of lesser importance. Bacteriuria is present in at least fifteen percent of all pregnant patients examined. Urine stagnated in the kidney and ureter, is an ideal culture medium for the rapid growth of colon bacillus and other organisms present. C. H. Mayo, says ninety per cent of kidney infections are blood borne, which confirms the findings of other investigators. Fall, in a careful examination of ten normal pregnant women, found residual urine and bacteria in the bladder, in all of the patients. Cunningham, Graves, Davidoff and Kretschmer, found that the bladder urine could be regurgitated into the kidney pelvis, in normal as well as diseased bladders, so that it is very likely that the ascending infections occur by this route, rather than in the periureteral lymphatics. Cunningham and Graves, produced regurgitation in the ureter in 86.8 percent of normal animals, and are of the opinion that infection from the bladder reaches the kidney by regurgitation, and not by antiperistaltic waves up the ureter. Cabot states that the passage of organisms from the colon to the right kidney through a direct lymph system, as suggested by Francke, is arguing on highly insecure grounds and lacks confirmation. Among the predisposing factors may be briefly mentioned: kidney infection, due to interference with the venous blood supply of the kidney, with disturbance of the glomerular circulation; faulty metabolism and elimination; together with lowered kidney function, as a result of elimination of the fetal and maternal waste products. Gerson, in an examination of the teeth of 100 patients, fifty of whom were pregnant, found deep dental caries and pulpitis three times as often in pregnancy. Constipation is present in one-fourth of all pregnant women, which favors the growth of bacillus coli, and under favorable circumstances, readily

produces bacillemia with subsequent bacilluria. Crabtree has demonstrated that colon bacillus may be found frequently in the blood, if the culture is made at the inception of the rigor. The staphylococcus and streptococcus have been found in infections arising from foci situated in the teeth and tonsils. Bumpus found urinary reflux in over 20 percent of 116 cases of pyelonephritis.

PATHOLOGY

During pregnancy the ureters are thickened, elongated and displaced laterally. The mucosa is congested and swollen in the lower segment. The kidney pelvis is dilated, the muscular fibers stretched, and round cell infiltration in the submucosa is the rule. The kidney substance suffers in the pelvic involvement, though the infection may be of short duration in the mild cases.

Later, if the infection is severe, organisms spread to the kidney cortex via the lymphatics, producing small punctate abscess formation. Pyonephrosis is a very infrequent complication, for as Braasch says, "Hydronephrosis does not occur during pregnancy." Both kidneys are involved in the vast majority of these infections, though the right kidney symptoms usually predominate, due to the anatomical position of the uterus. The fundus is inclined to the right, with rotation on its long axis, so that the right border of the uterus is in close proximity with the right ureter at the pelvic brim, where the ureter is least protected, having the bony pelvis for a background.

SYMPTOMS

The patients with acute blocking of the ureter, the symptoms are referred to the kidney. In this series of cases, pain in the back was present thirteen times, nausea and vomiting nine, dysuria and frequency ten, with marked elevation of the temperature in eleven. A chill will frequently usher in the acute infection, followed by a high thermal curve, septic in type. The pulse is usually soft and slow, in proportion to the temperature, a characteristic point in

kidney infections. A marked loss of weight is frequently seen with secondary anemia, as a result of the gastrointestinal upset. If drainage is fairly adequate, the symptoms are referred to the bladder, characterized by burning and frequency of urination. Pain in the bladder region is fairly constant.

DIAGNOSIS

A history of the symptoms enumerated, together with pus in the urine, the diagnosis of kidney infection is evident. These patients tolerate cystoscopic manipulations well and the procedure should be utilized if there is any reason to question the diagnosis. I have not seen any ill effects follow an x-ray examination in gestation, and it is of great help in determining, in severe cases, whether or not the pregnancy should be terminated. In two cases of this series, it was considered necessary to produce therapeutic abortion in order to save the mothers' lives. This was rendered imperative by their profound toxemia, and by the fact that in both patients, complete occlusion of the right ureter was demonstrated, due to mechanical pressure. This fact was proven conclusively by the introduction of ureteral catheters to the point of obstruction and leaving them in place for twenty-four hours. The diagnosis was further confirmed by ureterograms. Hammer percussion over the affected side elicited pain in every case. Deep palpation, anteriorly, will usually cause an accentuation of the renal symptoms. The thickened ureter may be palpable through the vagina.

BLOOD PICTURES

Fall pointed out that the bacterioly-sins and agglutinins of the blood, are increased in pyelonephritis of pregnancy thereby lessening the probability of infection in the puerperium and subsequent pregnancies. The white cell count ranges from nine to fifteen thousand, with the hemoglobin rather low. Appendicitis, typhoid and puerperal sepsis can usually be ruled out by the history, blood findings and urinalysis.

PROGNOSIS

The fetal mortality is very high in patients with prolonged high temperature in pregnancy. Many authors report as high as forty percent, where the infection is not promptly arrested. The pregnancy should be terminated, if the temperature remains high, the pulse weak and soft, the patient very septic, and if ureteral drainage and lavage does not relieve the toxemia.

TREATMENT

As soon as the diagnosis of pregnancy is made, the patient should be instructed to report regularly for physical examination, including blood pressure readings and urinalyses. In the mild, subacute infections, restricted diet, forced fluids, large doses of urotropin, followed by frequently changing the reaction of the urine, will usually relieve the infection. Assuming the knee-chest position several times daily, is also helpful. The patient should sleep on the opposite side from the infection, which will allow the uterus to gravitate away from the ureter. Caulk says, "I am convinced that physicians temporize too much with internal medication in treating pyelitis." It is in the acute retention cases, that ureteral catheterization and lavage is most beneficial. If necessary, a two way catheter may be left in the ureter for days, and continuous lavage instituted. This will usually control the most obstinate infections. Silver nitrate, in one to three percent strength, seems to do the most good, producing erosion of the pelvic mucosa, a reaction that seems to be necessary to eradicate the colon bacillus. The bladder residual urine should be treated by frequent catheterization, followed by the instillation of some bland antiseptic. This will add greatly to the patient's comfort, and permit rest and sleep. Following delivery, the urine should be examined for pus, for if the infection is not the result of pregnancy, the pathology will persist, only to flare up in a subsequent pregnancy.

Operations on the kidney during pregnancy, are rarely necessary, and

should be reserved for perirenal involvement, or extensive abscess formation in the renal cortex. Delivery will usually relieve the residual urine in the kidney and cause a remission of the symptoms of toxemia.

In this series, one patient died from eclampsia, the pyelo-nephritis being a complication. Two were delivered before term, one other patient was delivered at seven months. The remainder went to term and were ultimately discharged cured.

CONCLUSIONS

1. Pyelonephritis of pregnancy occurs in at least seven percent of all pregnant women.

2. Unless the diagnosis is made early and prompt treatment instituted, the fetal mortality will be high, and in addition, the chances of permanent renal damage to the mother will be greatly increased.

3. Bacteriuria is present in fifteen percent of gestating women, and this, added to the almost constant finding of renal stasis, accounts for the frequency of this complication.

4. Ureteral catheterization and drainage offers the patient the best chance of going to term, and having a viable offspring.

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Discussion

Dr. H. W. McKay, Charlotte:

There are two or three points I should like to mention. First, a word about prophylaxis. About a year ago I tried to present a subject in which I was very much interested, cystoscopy in children with renal infection which had resisted all other forms of medical treatment. Dr. Stirling, in his paper, mentioned that some one had brought out the direct relationship. As you know, the majority of pyelitis in children is in girl babies, and there must be some relationship between infection in childhood which extends on up until pregnancy. My point in this discussion was that in cases which resisted all medical treatment those children should be catheterized and gotten entirely free of any ureteral infection. I think that is one point that could be practiced as a prophylactic measure. It is easy to catheterize a child's ureter. Practically ninety per cent. of them are girl babies.

The second point I want to bring out is continuous drainage by the indwelling catheter in the pyelitis of pregnancy, or the return flow catheter. Either one can be used. I have in mind now a young woman whom I had recently under my care. The diagnosis was stone in the ureter. I happened to be called in consultation and slipped a catheter into this girl's left ureter. She was about four months pregnant at the time, and had a back-up of about 20 to 30 c.c. An x-ray was made, and the child's head was pressing against the ureter on the left side. The catheter was left in for about three days, and we used lavage, probably with acriflavin—I have forgotten what solution. She has had no more trouble.

The thing I want to bring out is that we have no drug that has been satis-

factorily proven to be a urinary anti-septic at kidney level. No one has been able to prove that to my satisfaction. Then the treatment of pyelitis must depend upon drainage and lavage of the kidney pelvis.

There is another class of cases we all see, cases of stone or stricture urethritis that have a pyoureter. You see these cases when they become pregnant. If the urine is not culture-free when she becomes pregnant, you certainly ought to expect to have trouble. With the bacteria colonized in the mucosa and submucosa you will have trouble.

Another point is the possibility of using some intravenous medication. I have in mind at this time mercurochrome. I do not know what effect it would have on the fetus or pregnant mother. I know I have been very skeptical about the use of mercurochrome until recently, when I was at the Urological Institute. I had used mercurochrome to a very limited extent, and was not only skeptical about its value, but afraid of it. They convinced me that mercurochrome has a very definite field of usefulness, and I was wondering when the doctor was reading his paper if there is not a definite field of usefulness in the pyelitis of pregnancy.

Dr. J. F. Geisinger, Richmond:

At the Stuart Circle Hospital we have been keenly interested in this problem for some time, so I was glad to see it on the program, particularly with a paper by Dr. Stirling.

With reference to the etiological element, pyelitis dating back to infancy, so to speak, in many of our cases we have not been able to demonstrate this condition. I am perfectly willing to admit that it may be due to lack of skill on our part, but by very careful questioning we have been unable to demonstrate, in two-thirds of these cases, that the trouble dated back to infancy. Many of them had been in the hands of very competent obstetricians, and had the urine regularly examined and the history carefully taken, and this was not demonstrated.

Now, in reference to the mechanical side of this question, personally I think

there can be no question whatsoever that if the mechanical element were lacking in pregnancy pyelitis of pregnancy would be practically unknown. I think the mechanical force is exerted at two points, the one mentioned by Dr. Stirling and at the point where the ureter crosses the pelvic brim. You can readily understand how the head will press against the ureter at this point.

Another point—frequently when you look into these bladders you will find the presenting part lying literally on the ureteral orifice. Before the urine can emerge, that part has to be lifted up either by the pressure of the urine coming down or by the urine from the opposite side floating it.

Now, I think there is no question that practically every pregnant woman has some degree of back pressure in the kidneys. Why it leads to infection in some and not in others we do not know. We have had somewhere between thirty-five and forty cases, and have gotten x-rays in most of them. In nearly every case the dilatation has been bilateral and the infection bilateral.

As to the efficiency of urinary antiseptics at the level of the kidney, many years ago an attempt was made to demonstrate whether urotropin, our favorite antiseptic, would be effective at the kidney level. The attempt was unsuccessful. However, urotropin will liberate formaldehyde wherever urine is put, so I have been inclined to use urinary antiseptics, hoping that if the urine stays in the pelvis of the kidney long enough, the formaldehyde will be liberated. We keep these patients sometimes ten days or two weeks; they go home, and come back and go through another stage of that sort, according to circumstances.

I should like to ask Dr. Stirling to speak on one point. Some of these patients are desperately ill people. The statement has been made that posture, medical treatment, etc., will cure any of them. Some of them come in with a temperature of 104 and are desperately ill, and the idea of standing them on the head is ridiculous. I wish he would enlighten me on this point. If the dilatation has proceeded to the point where

the calices are flattened out, with impairment of kidney function, with no improvement after a few days' treatment, we have been inclined to proceed to evacuate the uterus.

Dr. A. I. Dodson, Richmond:

Hearing Dr. Stirling's paper, and reading the literature, there are two or three points I feel should stand out very clearly. The first is the urgency of more careful prenatal attention to the possibility of pyelitis in pregnancy than possibly a large number of patients get. Of course, for a long time physicians have been studying their patients for the possibility of eclampsia, watching for the appearance of albumen, casts, etc., but we heard very little about pus. All the studies that have been made show that practically all pregnant women have a small amount of residual urine in the bladder, and a smaller percentage carry a small amount in the kidney, whether or not they have infection. Some have positive cultures taken from the bladder. We hear a great deal about the influence of foci of infection, teeth, tonsils, etc., in relation to kidney infection, so it seems we should be very careful to study every pregnant woman for any possibility of infective foci, be sure of constant elimination through the bowels and kidneys, and be particularly careful to watch the urine for any early signs or kidney infection—for a small amount of pus might appear before any constitutional symptoms. Further, it is noticed that about one-third of these patients have pyelitis of pregnancy in a subsequent pregnancy. Therefore it would seem very desirable that any patient who has gone through pregnancy with any degree of pyelitis whatsoever should be warned of this condition and thorough attention given it.

In the treatment, I should like to call attention to and lay particular stress on alkalization of the patients in all types of pyelitis, whether of pregnancy or otherwise. I believe it is the foremost medical measure. It can in no way take the place of catheterization or lavage. If the patients are taken reasonably early I do not believe that inter-

ference with pregnancy will be necessary. In most cases where it is necessary it is where treatment has been undertaken late. Of course, operations are very rarely necessary.

Dr. A. J. Crowell, Charlotte:

It seems to me the percentage of cases of pyelitis given by Dr. Stirling is rather high—40 per cent. I should like Dr. Stirling in closing the discussion to tell us how he arrives at the conclusion that 40 per cent. of pregnant women have pyelitis.

The second thing to which I wish to call your attention is the strong solution of nitrate of silver that he uses in his pelvic lavage. It seems to me that from one to three per cent. is rather strong. At our clinic we use nitrate of silver but seldom at present. I think flavine or mercurochrome is better. We know that nitrate of silver causes a precipitation of the salts in the urine, and I have the feeling that this precipitate will act as a nucleus for the formation of stone in the kidney pelvis. The biggest and best thing done for these patients, of course, is drainage. If we give drainage and have the patient drink plenty of water, that is about the best thing that can be done. If you want to use pelvic lavage, use hot saline solution or mercurochrome or flavine. These do not form precipitates, and leave no nuclei in the kidney pelvis for the formation of stone.

I think it is very rarely necessary, if the patients are properly cared for, to bring on premature labor. We have never had this to do, I think. Drainage is the main thing. Pelvic lavage with normal saline solution or some solution that does not produce a precipitate I think is the better.

Dr. R. L. Pittman, Fayetteville:

I cannot help but agree with Dr. Crowell on the question of the frequency of pyelitis in pregnant women. If pyelitis in pregnancy were so common and such a difficult proposition to treat as to require ureteral catheterization, a large percentage of obstetricians being general practitioners who are not in

position to use the ureteral catheter, the mortality would be much higher.

Another thing that is difficult to decide is what constitutes infection of the urinary tract in pregnant women. A woman may have infection and may run a quantity of albumen and be perfectly normal in other respects. If you examine her urine frequently you will find that with no treatment that urine will clear up, the albumen will clear up. In many instances the pus cells will be out of proportion to the epithelial cells. In my experience, it is hard to decide what constitutes a pyelitis. If you make the decision from pus cells alone, I have the feeling that it will go to 80 per cent.—but that 80 per cent. will not require catheterization.

I have noticed, with patients on whom it is necessary to use the catheter repeatedly, that they will very often empty the uterus spontaneously. Just how much is due to the systemic symptoms and how much to the catheter I can not say. I do not know what effect frequent use of the catheter, or leaving it in, has.

We treated six cases with mercurochrome intravenously, and those six cases cleared up more quickly than any other cases we had. But four of those cases had intense, almost uncontrollable, diarrhea, lasting for about four days. We may have given too much, and it may have had a bad effect on the intestinal tract. One woman miscarried at four months; another had intense sore throat. Mercurochrome has a very great effect on the mucous membrane of the gastro-intestinal tract. It does not affect the respiratory tract. The only marker effect we had was this intense diarrhea and sore throat. The sore throat cleared up spontaneously. The diarrhea is not associated with blood or mucus; just plain watery diarrhea for about four days that it seems impossible to control. Mercurochrome certainly does give good results with the pyelitis.

Dr. Stirling, closing:

I am sorry I did not make clear the point Dr. Crowell brought out about the

pyelitis of pregnancy. I said from 7 to 10 per cent. of pregnant women have pyelitis, as brought out by statistics.

I appreciate the discussion very much, and think it has brought out several points that should be mentioned.

Dr. McKay mentions the infection of childhood. In many of these cases I think we cannot trace it back to childhood. It has been shown that at least one per cent. of infants have pyelitis. Many are discharged when cured symptomatically, but not culturally. I think any urologist will bear me out in saying that every case of pyelitis is a surgical case and not a medical case, and should not be discharged until cured culturally as well as medically.

As to urinary antiseptics, I think urotropin has some value where you have puddling of the urine, as Dr. Geisinger brought out. Where the urine is emp-

tied very rapidly I think it has not time to act. I should be a little skeptical in using mercurochrome in pregnancy. Many of the cases had high temperature, some as high as 105, and I should be afraid to produce such a severe reaction in pregnancy, on account of the fetus. I have not seen the severe diarrhea of which Dr. Pittman spoke, but have seen it reported by many men.

Dr. Crowell:

May I add a word? Beware of making your diagnosis of pyelitis from the culture, because it has been our experience—though our technic may be at fault—that it is mighty hard to catheterize the ureter and not get a few colon bacilli from the bladder, and you may have a colon bacillus culture when there is really no infection.

On the Prevention of Eclampsia*

IVAN PROCTER, M.D., *Raleigh*

Eclampsia is characterized as an acute toxemia of pregnancy and has been known to the profession since the time of Hippocrates. It has been so closely associated with gestation that physicians have become used to it, and because of this it has not received the prophylactic attention which it deserves.

This is a day of preventive medicine, and no disease is more difficult to combat once it has been established than is eclampsia. Every physician in charge of a pregnant woman should, for this reason alone, employ all established means of preventing this horrible tragedy.

It is not my purpose to discuss the treatment of fully developed eclampsia, but to emphasize the fact that the dis-

ease can be prevented by proper treatment in the pre-eclamptic stage.

Eclampsia is a great deal more frequent than the old statistics would indicate. DeLee gives 1 in 600 pregnancies, the University of Michigan 1 in 104 deliveries, New York Lying-In 1 in 137, Gragin 1 in 79, Boston Lying-In 2 in 1200 patients, who have had efficient prenatal care. Sloane Maternity gives the incidence of toxemia in pregnancy at 6.3 per cent, convulsions occurring in 0.7 per cent of all pregnancies. I have found 3 to 5 per cent of all pregnant women to have some pre-eclamptic symptoms or signs.

Eclampsia, once established, produces definite, characteristic, and probably permanent injury to certain tissues. According to DeLee, at autopsy the liver shows the most typical changes, ranging from a state of cloudy swelling to general autolysis. There is albuminoid degeneration with hemorrhagic and anemic necrosis. The focal necroses occur near the small portal vessels which are often thrombotic. There is also fatty

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Dr. Ivan Procter wired that he was detained at home by professional emergency; he sent Dr. Baxter with his paper, and it was read, by request of President McLeod, by Dr. M. Pierce Rucker of Richmond.

degeneration of the periphery of the lobule resembling acute yellow atrophy. Hepatitis and hemorrhagic perihepatitis are almost constant. The kidneys are involved in most instances. Cloudy swelling and fatty degeneration are the rule. Thrombosis of the glomeruli, as well as of the smaller veins and arteries, is common. Such changes as these do not take place altogether in a comparatively few hours, but the foundation is laid some time ahead. It is during this preparatory stage that we must recognize the approaching disease and combat it.

The early signs and symptoms of the pre-eclamptic state are a slow, steady or sudden rise in systolic blood pressure, headache, nausea, restlessness, slight albuminuria or edema, diminished quantity of urine and increase in weight. These are the important symptoms and signs.

The symptom of pre-eclampsia usually appear in the last trimester of pregnancy, but they may develop in the beginning of the second trimester. We should encourage our patients to report for examination as soon as they miss a period and not wait for a quickening as many of them do. Toxemia of early pregnancy is often a good warning for toxemia of late pregnancy.

There have been hundreds of methods of treating eclampsia ranging between that of the English obstetrician who instructed his resident to do nothing when he reported the admission of a woman in eclampsia, to the most radical surgico-obstetrician who does a Cesarean section on every woman who has a rise in blood pressure and a twitching muscle. Most methods of treating eclampsia have had their day and are now gone. Many variations are in use however, at present, and each has its good point; but they all have a mortality rate unless prevention is the basis of treatment. If you approach an obstetrician today and ask him how to treat eclampsia, he will tell you that he doesn't know how, meaning that his results are not what they ought to be. All of us treat eclampsia as the surgeons treat

peritonitis, but both obstetricians and surgeons will tell you that it is easier and safer to prevent the disease than to try to cure it.

Many practitioners ask: "How can I prevent eclampsia when I don't see the patient until she is having convulsions?" You can't prevent that case, but if you teach that family prenatal care they will help you to prevent other cases. Explain to the family how they could have prevented this horrible disease by insisting that the patient consult her physician at regular intervals throughout pregnancy. Show them that a few prophylactic hours and dollars will save weeks of expensive treatment, and possibly the life of a wife and baby. Like all other great movements for good, education is the biggest problem in the movement.

Both the rural and city physicians will have to give freely of their time to put across this much needed campaign. I never lose an opportunity to drive home to the patient and relatives the importance of prenatal care as a preventative of this dreadful disease.

When a patient places herself under our care she has lifted a great burden of responsibility from her own shoulders and placed it upon her physician. It is for this reason that we have the right to demand the fullest cooperation of our patients, whether they think it is all necessary or not, and if they refuse to do their part resign from the case. Don't be afraid of losing a few patients. Teach obstetrical patients the part they must necessarily play in the prevention of eclampsia, and if they refuse to cooperate, let them employ someone else. We will establish a reputation as a thorough, conscientious, efficient obstetrician. We must do our part, however, to educate the patients—toxic and non-toxic. See them bi-weekly in the second trimester and bi-weekly, weekly or daily if necessary in the third trimester. Properly interpret the symptoms and institute active treatment when indicated.

The rural physician who cannot visit his patients confined to their beds with threatened toxemia, could often prevent

calamities by sending them to a good hospital for observation, which need not be prolonged if in the eighth or ninth month, when pregnancy could be terminated without danger to the child.

We are too prone to accept eclampsia as inevitable, when it is no more inevitable than is typhoid or diphtheria. Vaccine and serum treatments have almost stamped out these diseases. Proper prenatal care and active interference will stamp out eclampsia. Those of us who accept the responsibility of caring for child-bearing women should organize as physicians have done in other branches of medicine, start an anti-eclampsia campaign, and stamp out this plague. This complication is the bugbear of pregnancy; every patient is a potential case of eclampsia, and if we enlist their cooperation by forceful educational campaigns we will have done a great thing for humanity and considerably reduced our task.

What is proper prenatal care? It is the prophylaxis of pregnancy. The details vary in different clinics, but the principle is the same in all. Our policy is to give every pregnant patient a thorough and complete physical examination at her first visit. This gives us a foundation for all of the care to follow. It establishes the confidence of the patient and eliminates the dread of returning for observation on account of the fear of an examination which is to come later. At this first visit a thorough search is made for foci of infection in the teeth, gums, tonsils, nose or pelvis of the kidney, proper steps being taken to eradicate such foci. A specimen of blood is taken and if the history or findings warrant it a Wassermann is done. The internal, external and outlet pelvic measurements are taken. Particularly women with contracted pelvis seem to be more prone to develop eclampsia. The weight and blood pressure are recorded. The history of previous infectious diseases, especially those that are destructive to the kidney cells is noted. The menstrual and marital history and the general history of the husband are inquired into.

The patient is instructed to measure the amount of urine voided in twenty-four hours, and send a four ounce specimen for examination. The twenty-four hour amount is measured each month throughout the pregnancy. The patient reports every three weeks until the fourth month and thereafter every two weeks. During the two week visit period, a specimen is sent every alternate week so that every seven days a urinalysis is made or the blood pressure is taken. During the last month the patient is seen, and a urinalysis made every week. Throughout the prenatal period the blood pressure is taken at each visit, the patient interrogated as to headache, nausea, dizziness, restlessness, irritability, insomnia, spots before the eyes and edema. If any of these signs are present it may be necessary to make the observations more frequently. A rise in blood pressure is probably the most reliable sign of approaching toxemia. Any gradual or sudden rise in blood pressure during the last half of pregnancy should be considered as a danger signal. Preventive treatment should be instituted at the first warning. If other symptoms, such as headache and nausea, are present with the rise in blood pressure, the treatment should be more active.

Rest is the foundation of all therapy. Rest for the body; rest for the kidneys and liver. Patients will not really rest on being told to lie down a certain part of the day, so it is the best policy to put them to bed. Milk should make up a greater part of the diet, other foods being restricted according to the symptoms. Elimination is increased by mild purgation, and flushing the kidneys with large quantities of water. An abundance of fresh air is provided for. If the blood pressure falls and the symptoms disappear, the patient can be allowed to get up. If the blood pressure does not fall and the symptoms persist, diet is restricted to milk or even starvation. If the blood pressure continues to rise in spite of starvation, elimination and absolute rest in bed, induction of labor is indicated. Herein lies the

secret of preventing eclampsia. When our efforts fail to reduce the metabolic burden of pregnancy so that this intended physiologic process may continue to its natural end, we must take such radical steps as are necessary to get rid of the cause of the impending disaster. These steps are summed in the termination of pregnancy. This rule is absolute with us, and we believe that when it is generally adopted we will greatly lower the maternal and fetal morbidity and mortality of eclampsia.

Case Reports.

Mrs. R. L. T. Age 41. Para VIII.

The patient was first seen August 16, 1921, and at that time the systolic pressure was 150, diastolic 65, the urine free from albumen. Restricted diet, rest in bed and fresh air dropped the pressure to 135 for a month. Sept. 19th, the pressure was again 150 and the diastolic had risen to 90. The urine remained clear. Two weeks later, the pressure was up four points, and patient was put to bed. On Oct. 13th, the pressure jumped to 170 and the urine showed a trace of albumen with occasional hyaline and granular cast. Induction of labor was indicated and she was immediately sent to the hospital. A No. 5 Voorhees bag was inserted and the delivery completed by version. (Pain was reduced to a minimum by morphine-scopolamine analgesia), and the 7 3-4 pound male infant breathed spontaneously. The mother and baby were discharged in good condition on the 12th day, the blood pressure having returned to normal.

Mrs. E. M. Primipara. Wt. 117. Age 24.

March 7, 1924, physical examination was negative, pelvic measurements normal, blood pressure 125 systolic, 80 diastolic, urinalysis negative. The blood pressure ranged between 120 and 130 systolic until Sept. 11th, when it rose to 140. No other symptoms. Meats were restricted. Less than three weeks later the pressure had risen to 150 systolic, 98 diastolic, and the urine contained a trace of albumen. The patient

was ordered to bed with food restricted to milk. The pressure immediately dropped to ten points, but rose to 160 on getting out of bed. The albumen was now increased. Returning to bed without food dropped the pressure but when up again four days the systolic went to 165 and the diastolic 105. The albumen continued to increase but no casts were present. The patient was again ordered to bed on milk diet and three days later labor was induced with castor oil and quinine. Ten hours after administration labor was complete with the birth of a seven pound girl. Mother and baby were discharged from the hospital on the 12th day, but the urine showed a large quantity of pus and a heavy cloud of albumen. The blood pressure was 135 systolic, 95 diastolic.

Mrs. J. W. Primipara. Age 21. Wt. 102.

Patient first seen January 11, 1924, when she complained of painful micturition. The uterus was enlarged and soft. The pelvic measurements normal. Lungs negative—heart presented a ringing systolic murmur at the apex. Blood pressure 100 systolic, 60 diastolic. A faint tract of albumen developed March 13th, and persisted until June 9th, when it increased in amount. September 11th, the blood pressure began to rise and went to 165 in four days. Absolute rest in bed with diet restricted to milk lowered the pressure and the edema disappeared. On being allowed out of bed the pressure rose again but fell when rest was insisted upon. For ten days the pressure remained near 130 and at the end of that time the patient went into labor and was normally delivered of a healthy eight pound boy.

Mrs. G. W. N. Age 41. Married 15 years. Primipara.

Very anxious for a baby and willing to take any risk. Toxemia began at 6 1-2 months of gestation with headache, nausea, trace of albumen and a rising blood pressure. The patient was put to bed, restricted to milk diet and given mild purgatives. The blood pressure fell and she was allowed up a few days only to return when the pressure began to rise. Intermittent absolute rest milk

diet and starvation carried her along for six weeks. Albumen increased from a faint trace to a light cloud. On December first, the blood pressure rose to 170 and granular casts appeared. She was immediately sent to the hospital and labor was induced by inserting a Voorhees bag. A rigid cervix prolonged parturition which was terminated by forceps. Mother and baby discharged two weeks later in good condition.

Mrs. M. S. C. Age 41. Para VII.

Seen in consultation October 6, 1920, and the following history obtained from the patient's physician. Duration of pregnancy 7 months. About two months ago the patient's ankles began to swell. Since that time her condition has gradually grown worse—the patient having refused treatment up to three weeks ago. During the past three weeks she has taken diuretics, infusion of digitalis and purgatives without relief. Diet was restricted to milk. At present there is general anasarca.

Blood pressure 220 systolic, 120 diastolic.

Immediate termination of pregnancy was advised and patient sent to the hospital at once. Urine coagulated on boiling and was heavily laden with casts. A No. 4 Voorhees bag was inserted and the patient delivered of a four-pound stillborn fetus five hours later. The blood pressure began to drop at once and the urine, voided in enormous quantities, improved. Discharged seven weeks later in good condition.

Conclusion

1—Every physician should feel a personal responsibility in educating his patients and the public as a whole in the necessity for pregnant women visiting their physicians at regular frequent intervals throughout gestation. Acquaint them with pre-eclamptic symptoms and signs, and insist upon these being reported as soon as they make their appearance.

2—When the physician is fulfilling his obligation he should demand the fullest cooperation of the patient, a duty that she owes herself, her family, her

unborn child and last but not least her physician.

3—Be quick to detect and accurate in your interpretation of pre-eclamptic symptoms and signs. (A rise in blood pressure is the one most reliable sign).

4—Institute active treatment at the first warning.

5—If in spite of absolute rest in bed, restriction of diet and elimination, the pre-eclamptic symptoms and signs persist, a termination of pregnancy is indicated and labor should be induced at once.

6—Such treatment will greatly lower the morbidity and mortality of eclampsia.

Discussion

Dr. Norton Mason, Richmond:

I wish there were some way by which this paper could be distributed to all the members of the society now in session and of all the other societies. Dr. Procter is entirely right in saying that the symptoms and signs come on very gradually. It has been my experience that the signs come on before the symptoms. That is, we find albumen in the urine and elevated blood pressure even before the patient begins to notice any symptoms such as headache, dizziness, swelling, etc. The high mortality about which we have been reading in the health reports from obstetrics is due to the fact that patients will not consult the doctor early. I think that if we should put on some program to educate the public, telling the husband and wife the danger of delay, we could lower the mortality a great deal.

Dr. J. H. McIntosh, Columbia:

That is a very scientific paper; in fact, so scientific that I think it missed, really, the milk in the cocoanut. It has been my experience that if you will train your patients from the very first to have at least one good regular bowel movement a day you will not have any eclampsia, and you will not have to deal

in blood pressures and that sort of thing. The absolutely necessary thing for the woman in pregnancy is to train her to have her bowels move every day. If you do that you will not have eclampsia.

Dr. Wm. R. Wallace, Chester, S. C.:

There is one point brought out in this paper which I should like to emphasize. It was very forcibly brought to my attention a few days ago because of a mishap that I suffered in handling an obstetrical case. It is the matter of examining the urine weekly. We have been so used to the biweekly examination of urine that the necessity for weekly examination has not been brought home to us. Recently I had a case, a young woman, who put herself under my care early in pregnancy and sent her urine regularly. It was no fault of hers. There was no trace of albumen. The next biweekly specimen showed a heavy cloud of albumen. The blood pressure was 170. I put the patient in the hospital, with limitation of diet, elimination, etc. On account of the nearness to term I put the patient on the table and introduced a dilator for delivery. While on the table the patient complained of blindness—absolutely the first symptom she had. She was put back to bed and rapidly delivered. Six hours later she had a convulsion, followed by several others, and then died. I think this will bring forcibly to our minds the necessity of weekly instead of biweekly examinations.

Dr. Rucker, closing:

I think Dr. Procter's charts show very beautifully the effect of rest on these patients. It is a therapeutic measure we are apt to neglect. We put our patients on a diet and let them go on doing their household duties, and they are not resting the kidneys as they should. His charts show the good effect of rest and the bad effect of getting out of bed.

I am sorry Dr. Procter did not give us the after results in these patients. Some of them were treated four or five years ago, and I think it would have been very instructive to give us some inkling as to their present condition. I do not believe the profession really knows how much permanent damage the toxemia of pregnancy does. There have been two good pieces of work along this line, one from Hopkins and one from Harvard, in which the cases have been followed for several years, and I think it is 75 per cent. that show permanent kidney damage. A recent report from Hopkins, says that the pre-eclamptic cases show more damage than those that went into convulsions. Apparently the time element does the harm; it was not the rapidly fulminating case that goes into eclampsia that was damaged, but the long drawn out case that you try to carry up to viability. In those cases the kidneys are permanently damaged.

Enterospasm*

ROBERT C. BRYAN, M.D., F.A.C.S., *Richmond*

Mr. W., age 32, married, Life Ins. Agent, consulted us in early October for pain in the left iliac flank which had been going on since the February preceding. His family history shows that his father died of Bright's disease, and his mother from supposed carcinoma of the leg which required amputation. The

pain from which he has been suffering was most severe in character, intermittent, nearly always referred to the left flank, although radiating at times to the right, and occasionally down the left leg, and for which he had been dieted, had had colonic irrigations and received general medical care and frequent laboratory examinations. The first week in July, 1924, he had an x-ray picture

*Read before the 27th Annual Meeting of the Tri-State Medical Association, February 18-19, 1925.

taken by Dr. A. L. Gray, who reported as follows:

Gastro-intestinal Condition

Stomach J shaped, reaches the sacro-sciatic notch, shows no filling defect. Peristalsis about normal. Pylorus opens and duodenal bulb fills well, normal in size and shape and smooth in contour. Course of duodenum normal.

Six hour examination: Stomach empty. Barium has reached the lower sigmoid. Scattered masses in the transverse and descending portions of the colon. Terminal ileum incompletely filled and cecum fairly well filled. Both movable and appear normal. No tenderness. Appendix not visible.

Twenty-four hour examination: Small intestine empty. Barium as far as the rectum. Cecum emptying. Transverse colon swings behind the left pubis, but is easily released in the recumbent position. Appendix not visible. No abnormality seen.

Plates confirm fluoroscopic findings except that in none of them is the duodenal bulb completely filled, but the outline was very clear on fluoroscopic examination. The twenty-four hour plate shows a very fine thready line marking the course of the appendix immediately below the head of the cecum.

Conclusion: Patient has considerable dilatation of the stomach and ptosis both of the stomach and transverse colon. There is no evidence of organic pathological condition of the gastro-intestinal tract otherwise.

He continued, however, to lose somewhat in weight. His highest weight at any time has been 148 and now he weighs around 135. Continuing to suffer and making no progress, in September he went to New York, was operated on by Dr. John Douglas at St. Luke's hospital in that city, who reported the following to Dr. T. N. Barnett of Richmond, who then had charge of him:

On September 13, 1924, Mr. W. who has been under your care in Richmond was sent to me by a relative of his in New York, for an examination as to his condition.

He told me of the various examinations that had been made by you and of his diagnosis, etc., and as an after-thought, when I was examining him, called my attention to his swollen testicle on the left side. I believed that he had a tuberculous testicle on account of a small nodule of the upper pole of the epididymis, although the cord was not thickened, and advised him to have an operation. I operated on him on September 16th. At the operation the epididymis did not look to me like a tubercular condition; the testicle itself appeared normal. I had a frozen section made and was informed by the pathologist that the section showed some form of new growth. I therefore re-

moved the testicle which was evidently abnormal through the most of its extent and contained seven or eight small necrotic areas. The final section and pathological report from Dr. Francis Carter Wood came through yesterday as carcinoma of the testicle.

Mr. W. is leaving the hospital today for his home in Richmond. At the request of his relatives I have not told him that he had carcinoma, but I have informed Mrs. W. of this fact. Mr. W. still thinks that he has a tuberculous testicle. Of course the question arises as to whether he had already formed retro-peritoneal metastases, as these growths metastasize to the retro-peritoneal glands and not to the inguinal region. A further question arises as to the advisability of giving him x-ray treatment at once as a prophylactic measure in the hope that if there are any metastases, they may be so small that they could be affected or controlled by such radio-therapeutic measures.

I have asked Dr. Wood's opinion and that of several of the other surgeons in the hospital and while Dr. Wood says that he has succeeded in controlling the growth of such metastases where they have already appeared, he does not know of any case that had been entirely cured. This may be somewhat contrary to the opinion of Dr. Ewing and the men of the General Memorial Hospital, who believe that ovarian or testicular growths which most closely resemble embryonal tissue in their origin, are best affected by the x-ray.

I have told Mr. W. to go back to you for advice as to his gastro-intestinal condition; and it seems to me wisest not to tell him the true nature of his condition at present, but to be guided by his subsequent progress. If he improves under your treatment directed to his ptosis and general gastro-intestinal condition, it may be fair to assume that we have been fortunate enough to remove the primary growth before metastases have occurred. If he does not improve, even though the metastases have not attained a sufficient size to be palpated, it might be wise to advise him to have some radio-therapeutic treatment. And of course you can examine him from time to time to feel if such growths appear. I have explained all of this to Mrs. W. but as I have before stated, have so far left him with the impression that his condition was tuberculous.

I shall be greatly interested in his subsequent progress.

We found in October that his general condition was one of evident weakness and moderate anemia from constant suffering. The head, mouth and chest were normal. Blood pressure 120-80, urinalysis negative, hemoglobin 69 per cent, red blood cells 4,000,000, leucocyte count 7,000, Wassermann negative. Abdominal examination was negative, the belly flaccid and soft; nothing abnormal

could be noted except considerable gas; the kidneys could not be felt; spleen and liver were likewise not palpable. Rectal examination was negative, prostate normal. No glands,—epitrochlear, cervical or axillary,—were felt, although a chain of inguinal glands on the left side were noted which seemed a little harder than normal. Noting the operation done in New York and presuming the condition to be one of malignant metastases in the abdomen, he was sent to Dr. F. M. Hodges, October 15, 1924, who took an x-ray and reported that there were probably a few shadows which might be metastases in the sacrum and lower spinal cord, which could be responsible for the pains he was having, and to this end he had 7 or 8 x-ray treatments of an intensive character designed to influence the metastatic condition. The patient continued to suffer and at intervals the pain was of such a severe character that morphine had to be administered, which only partially controlled it. He was given no medicine other than some iron preparation, which apparently was of benefit, as, on the 24th of November, his hemoglobin was 90 per cent. He was encouraged in the best of foods, rest, quiet, and given every care possible to build him up. The pain was now so constant and severe that he sought relief at many hands, consulting osteopaths, chiropractitioners, regular physicians and finally coming back to us. Feeling assured that the condition was carcinomatous, and that no benefit could be derived from surgical treatment, but that it was only fair to him to keep the real state of affairs away from him, he was given opiates, bromides, and allonal in varying doses. Friday, January 2nd, he had severe pain which was slightly controlled by morphine given by another physician, and on Wednesday, January 7th, the character of the pain was so unbearable that, between 10 p. m. and 2 a. m. he was given two and a quarter grains of morphine by hypodermic with only a moderate control. During the paroxysm of pain the belly wall became extremely rigid and hard, letting up some as this most intense pain wore

off. There was vomiting. Rectal examination was negative. Our diagnosis at this time would have been rupture of a duodenal ulcer, but for a pretty thorough familiarity with the case. The pain was referred down the back of the leg, to the suprapubic region, and through the left flank to the back. The pain was constant throughout, but intermittent in its severity, being more violent at one time than at another. During this day he had been given a barium meal to make further investigations of his intestinal tract, Dr. Hodges reporting that the stomach, duodenum and upper ileal tracts were negative, nothing of any significance being noted. The following day he was much prostrated by the severity of the pain the night before, but we considered it important to have a report of the barium test in the lower intestine and he returned to Dr. Hodges, who reported an enormous dilatation of the ascending and transverse colons, and, under the fluoroscopic investigation, an intermittent, remarkable contracture of the sigmoid in which the gut, at apparently two different segments, separated only by a few inches, would be alternately ballooned and distended, followed immediately by a contracture at the same point so that the barium meal would appear only as a streak or line. At no time during the examination did the appendix show. Dr. Hodges said he had never seen any such condition before, and would hesitate to make a diagnosis. We at this time ventured to say that the condition was a chronic intussusception as the character of the pain the night before was distinctly of an intestinal type. After consultation with the family the patient was brought to Grace hospital. It was decided to operate that night, our intention being to resect the colon for the supposed chronic intussusception of the sigmoid. On admission to the hospital, January 8th, at 6 p. m., the leucocyte count was 15,000, polys 81 per cent. He commenced to have again violent seizures of pain in the left pelvic region, of the same character and type as the night before. General anesthetic, nitrous oxide-ether,

administered by Dr. Willis, assisted by Drs. Creekmar and Clark, low median incision, the incision being later run upwards to the left and above the umbilicus. There was but little abdominal fat. The peritoneal cavity was readily entered, and immediately an enormously distended transverse colon came into the field. It was evident that the obstruction was distal to this point. Just at this time the caput was sought and a moderately inflamed appendix, about three inches in length, attached by a long fibrous band to the mesenteric border of the sigmoid, (about the location of segmental contraction referred to later on) was readily removed, the mesentery being tied off with catgut No. 2, base of appendix clamped, tied with a double ligature of Pagenstecher, severed with the knife, the stump seared with carbolic acid and alcohol. It was noted that the distension of the transverse colon extends well back to the caput, but apparently the ileo-cecal valve was holding, as there was no apparent regurgitation into the ileum, although the ileum was somewhat congested, and slightly thickened by the propensitory muscular hypertrophy to pump through the increased resistance beyond. We had in mind throughout the entire operation the establishment of metastases in the peritoneal cavity, particularly retroperitoneally, so that at each step of the investigation, enlarged retroperitoneal lymph glands or metastatic evidences along the gut were constantly sought for, but none was ever found. The intestines were now eviscerated, thrown up over the upper abdomen, hot towels applied and the distended transverse colon was found to run well up in the splenic area and was lost there, it being impossible to reach and follow it satisfactorily. The search was abandoned temporarily and an investigation now made of the descending colon. Its mesentery was apparently a little shorter than normal; the appearance of the gut was, however, normal. It was traced downward, and, about the brim of the true pelvis, the sigmoid was seen to go into a violent state of contraction extending over a distance of two and

one-half to three inches. This contraction was so evident and pronounced that the longitudinal bands would become snugly parallel and practically blending, so that the tissue between the two could hardly be seen. The peristaltic wave would now begin proximally, the gut dilating slowly so that within ten to twenty seconds, this segment, which had been so violently contracted, would become expanded so that the distance between the longitudinal bands would be an inch or more now. Air caught in the intestine during this tight spasm of the gut would balloon out, thinning the wall so that it looked like the threatened blow out of an inner tube. This condition of affairs was observed to take place on three separate occasions, 9:50, 9:52 and 9:56, the consistency of the gut during its violent contraction was about the size and length of a firmly-rolled, small, all-tobacco cigarette or child's finger. When dilated it would be the size of a child's forearm. Just above this segment the intestine possessed its normal caliber for three inches or more, and just proximal to this (about the descending colon), it was seen that the intestine was undergoing a similar contraction and dilatation throughout a space of about two and one-half inches as was going on below, so that the violent peristaltic wave could be seen above at one time and below at another; but we did not see this intermediary segment at any time contract. Scratching the gut at the time of the dilatation did not seem to provoke this peristaltic spasm. Nothing abnormal was noted about the mesenteric vessels; during the intense spasm there was, apparently no great venous congestion; but it was evident to our mind that this contraction was the cause of the terrific pelvic pains from which the patient had been suffering. Resection of the gut, colostomy, ileo-colostomy, appendicostomy were all considered, in turn; but each abandoned as an undesirable surgical solution. The only surgical procedure done was making firm, multiple, linear scratches longitudinally over the site of the powerful spasm with closed hemostats, our idea being to moderately

traumatize the muscular coat hoping to get a vascular reaction, which would ultimately influence the enervation of the terminal supply to the peritoneum covering the gut at this point. Search was now made again in the left lumbar region: the kidney was noted to be firm, immovable, plastered down, hard, apparently somewhat smaller than normal. We could not feel any metastatic growths about its pelvis or hilum; but it occurred to us that the terrific contraction of the gut below was due to an over-stimulated enervation which apparently arose about this location. The operation had now extended about an hour. No radical surgical work was considered to be feasible. The right kidney was movable;—one could shake hands with it;—the liver normal in shape and color; gall bladder distended, compressible; spleen normal; pancreas was likewise felt and was normal. We felt about the aorta and internal abdominal ring particularly for enlarged glands; but none was found. At this time a long sixteen inch rectal tube was placed in the rectum and brought well up in the sigmoid, we hoping to get it through the lower contracture in the sigmoid for the passage of air and fecal matter. Firm inspissated fecal matter was felt, particularly in the distended colon above the upper contracture, and many white shining particles of bismuth were seen plainly in the distended thinned out transverse colon. A No. 20 French catheter was placed in the pelvis, brought out at the lower angle of the wound, and the tissues sewn about it tightly. While in the process of approximation of the peritoneum with interrupted catgut No. 2, a saline solution, about 2,000 c.c., was allowed to run into the peritoneal cavity for absorption. The remaining tissues were brought together with catgut No. 2; interrupted silkworm gut through the skin; no drainage. Duration of operation one and a half hours.

Diagnosis: Apparently hyperenervation of the sigmoidal segment by nerve pressure in or about the region of the left kidney;—cause unknown.

Remarks: Unusual idiosyncrasy to anesthesia, practically reacting on the table, and on returning to his room had every appearance of a normal patient and carried on a quiet conversation.

January 15, 1925—For several days past there has been an evident swelling, symmetrical, in the midline between the umbilicus and symphysis, and about its center in the line of the incision there is a knuckle of gut protruding so that it shoves back the skin for a distance of half an inch or so. This is unquestionably the intestine, as violent vermicular waves can be seen which retract the skin as the work. More inferiorly in the midline is a pinpoint opening through which considerable serum escapes and has been regularly escaping for several days. While having this stomach washed out at 8 p. m. there was a rather violent abdominal contraction, the wound bursting open for four or five inches and the bowels escaping over the abdominal wall, tucking in here and there under the adhesive straps and extending nearly to the bed. The operating room was gotten ready as quickly as possible, he was given a half grain morphine and 1/150 atropine fifteen minutes before the operation. General anesthetic administered by Dr. Creekmur (chloform), assisted by Drs. MacLean, Clark and Gunn. The silkworm gut sutures in the upper angle of the wound were removed, the lower ones having been removed yesterday morning preparatory to a possible cauterization of the protruding gut to allow of the escape of gas. Several large loops were found on removing the dressing, big as a child's wrist, bluish red, with some torsion of the mesentery. The wound had made no effort whatever to close or unite, it being a clean incision from the upper to the lower angle, practically identical with the appearance of the original incision, but for no bleeding points. The intestines were washed off freely with pitchers of saline, replaced with considerable difficulty, the patient at this time being considerably shocked by this handling and trauma. They were finally returned to the abdominal cavity, retained with a saline sheet, and

through and through stay sutures of silkworm gut were put in well back of the line of the wound and brought out on either side, going through all the abdominal wall structures. The peritoneum and fascia were now sewn separately at intervals of about half an inch with chromic, 20 day, No. 2 so that on the completion of the operation the belly wall was brought as snugly together as possible. A catheter was put in through the lower angle of the wound deep into the pelvis and through it a pint of saline was run into the peritoneal cavity during the process of sewing up, and a rectal tube put in and considerable fecal matter, probably four or five ounces, of a fluid character escaped. Patient reacts partially on the table and was put back to bed in a good condition and given an opiate.

January 16—Pulse 104, temperature 98.8, considerable distension but condition is more satisfactory than had been anticipated.

January 19—The catheter in the lower abdomen removed; the eye is filled with a plastic exudate. The wound, except for looking somewhat red from the tension sutures, is otherwise normal. He is on soft diet, receives an enema daily, temperature 98.6, pulse 84, and is apparently going on to a happy recovery.

February 1—Complained of some pain in the left inguinal region. Apparently there is a little greater enlargement of the inguinal and saphenous glands which are quite painful. Toward the afternoon there is a distinct edema of the extremity, particularly about the foot, marked pain, rise of half degree of temperature, so that hot applications are applied with the hope of controlling the condition. He had a restless night but is somewhat better this morning. There is a distinct edema and the glands in the inguinal and saphenous region are still enlarged. On account of the swelling and edema we are of the opinion that the condition is thrombophlebitis of the femoral vein.

February 5—There is a swelling appearing in the right groin about the saphenous opening similar to that which appeared on the left side; there is ede-

ma of the leg, with moderate pain, some rise of temperature, one degree. Heat and elevation of the limb make him more comfortable. It is noted now that the superficial epigastric veins of both sides, with their tributaries, are much engorged and very prominent. These veins flow into the femoral vein and the plugging of these veins bilaterally explain their suffusion.

February 16—Patient is still in the hospital but has been sitting up daily. There is a constant tendency to gas formation which is uncomfortable but not painful, and for which we have been giving three times a day before meals the bacillus acidophilus with probably some little benefit. His hemoglobin is 48 per cent, R. B. C. 2,600,000, urinalysis negative, a provocative Wassermann negative, and he is apparently getting on rather satisfactorily and we hope will be able to leave the hospital at a comparatively early date.

Although it is impossible to predict the ultimate outcome, the very violent and unusual sigmoidal contraction of the intestine deserves some consideration. Stewart, Manual of Physiology, says:

The cause of the definite direction of the peristaltic wave is not understood, but it is grounded in the anatomical relationship of the intestinal wall. Normally the constriction travels slowly down the tube, squeezing the contents before it. A portion of the intestine may be resected, turned around in its place and sutured, so that what was before its upper is now its lower end, the contraction wave appears to be unable to pass and the obstruction to the onward flow of the intestinal contents causes marked dilatation of the gut and sometimes serious disturbance of nutrition. The peristaltic wave of the large intestine is similar to that of the small intestine, starting at the ileo-cecal valve it travels downward, but does not in normal conditions, reach the rectum, which except at defecation remains at rest. Peristaltic waves in the intestine may go on when their nervous connections have been severed, the mere presence of food exciting them when reflex action has been excluded by severance of the nerves. Nevertheless the nervous system does exercise some influence in the way of regulation and control, if not in a direct initiation, of these movements. The vagus is the efferent channel of this reflex action and stimulation of its peripheral end may cause movements of all the alimentary canal from the esophagus to the large intestine, and may strengthen movements already going on;

but section of them does not influence them, or cause stoppage of movement when it occurs. We do not know to what extent the movements of normal digestion are directly excited by nerves, and to what extent they are reflex. The splanchnic nerves contain fibres by which the intestinal movements may be inhibited, but they are certainly not always in action, for section of these nerves has no distinct effect on the movements in spite of the vascular dilatation which it gives. On the other hand stimulation of the peripheral end of the cut splanchnic usually, but by no means invariably, causes arrest of the peristalsis. Occasionally, however, it has the opposite effect. We have no evidence that the ganglion cells in the wall of the alimentary canal are either automatic or reflex centers for its movement. The lower part of the large intestine is influenced by the sacral nerves,—2nd, 3rd and 4th sacral,—and by certain lumbar nerves, in the same way as the higher parts of the alimentary canal, and particularly the small intestine, are influenced by the vagus and splanchnic. Stimulation of these sacral nerves in the spinal canal causes contraction of the descending colon and rectum; stimulation of the lumbar nerves or the portions of the sympathetic into which their visceral fibres pass causes inhibition of the movements, preceded, it may be, by a transient increase. Stimulation of the sacral nerves causes or increases contraction of both coats of the descending colon and rectum; stimulation of the lumbar nerves inhibits both; the same law holding good in the small intestine in that the two coats are contracted together with the action of the vagus or inhibited together by that of the splanchnic. Some drugs, such as strychnine, stimulate peristaltic movements by action through the central nervous system, others, like nicotine and muscarine, by action directly on the intestine. An isolated loop of intestine fed with properly oxygenated blood remains altogether or nearly at rest; if the blood is allowed to become venous, movements are set up which much surpass the normal movements both in their vigor and in the speed with which they travel.

We have taken up with the Bureau of Research of the American College of Surgeons, the question of enterospasm and find that the literature thereon is very limited, so much so that it is apparently of but little significant value.

Morson. A Case of Enterospasm. *Brit. M. J.*, 1917, i, 873.

Having read with interest the article by C. H. Whiteford entitled "A case of enterospasm in which the portion of intestine involved was of unusual extent," the author cites the following case of enterospasm in a boy of eighteen.

The patient was suddenly seized with acute pain in the epigastrium and on examination was found to be suffering from profound shock, with a pulse rate of 120, temperature 99 de-

grees, and abdominal distension. A history of attacks of acute indigestion during the past two years was obtained. An examination of the abdomen revealed absence of liver dullness and immobility of the muscles of the anterior abdominal wall on respiration. There had been no vomiting. As it was considered possible that some abdominal catastrophe had taken place, it was decided to perform an exploratory operation without delay. On opening the abdomen in the middle line, immediately above the umbilicus, distended coils of intestine forced their way through the wound. An examination of the small gut showed that some portions were collapsed, simulating the condition found in the intestine distal to a mechanical obstruction, while other portions were dilated. No evidence of blockage of the lumen of the gut was discovered. The stomach was dilated and the gall bladder distended to the size of a "William" pear. As the condition of the viscera was considered to be due to a functional lesion rather than an organic one, it was decided that further operative interference was inadvisable.

The day following the operation the patient commenced to vomit pure bile in large quantities. The vomiting lasted for twenty-four hours. The pulse-rate, previously maintained at over 100, decreased, and the abdominal distension gradually disappeared. Apart from considerable difficulty in getting the bowels to act, convalescence henceforth was uninterrupted.

Paresis of the duodenum probably accounted for the distension of the gall bladder and the biliary vomiting, following operation. It is possible that this vomiting might have been prevented had the gall bladder been aspirated.

As Dr. Whiteford points out in his article, these cases of enterospasm occur in neurotic subjects, but it is most likely that undigested and irritating foods, such as fruit seeds, may act as an exciting cause.

Whiteford. A Case of Enterospasm in Which the Portion of the Intestine Involved Was of Unusual Extent. *Brit. M. J.*, 1917, i, 392.

The author quotes Hawkins as follows and cites a case report.

"Without any change in the intestinal wall, one or more sections of the intestine may exhibit a purposeless tetanic contraction. It is thereby converted into a hard, nearly solid, cord, pale and bloodless."

Case Report. Woman, aged forty-nine, mother of two children. Suffered from "indigestion" for thirty years, with vomiting, on an average, once a week. Nine years ago the discomfort increased to actual pain, which occurred soon after the ingestion of food, milk causing less pain than solid food. Vomiting gradually became more frequent.

Condition when first seen. Thin; only a quarter of an inch of abdominal subcutaneous fat. Four years ago she was quite plump, patient stated. Vomiting continued once daily, usually after breakfast, but never contained

blood. Constipation with flatulence had existed for many years.

The only abnormality in the abdomen was a constant, tender, ill-defined fullness situated between the umbilicus and the left costal margin. Rectal and vaginal examination negative except for a mobile retroverted uterus with an elongated cervix. A pessary had been worn for twenty years. Treatment by diet and drugs had given very little relief.

Operation. Celiotomy. Abdomen enormously distended by gas; greatest circumference 14 inches (sic!), Duodenum uniformly distended by gas (diameter one and three-quarter inches). Small intestine was traced downwards for its whole length. The upper three feet of jejunum, distended by gas to the size of the duodenum, became abruptly narrowed three feet from the duodenum, being in a state of intense contraction. The next three feet of jejunum uniformly contracted into a rugose, anemic cord half an inch in diameter. Below the spastic area the rest of the small intestine was normal, as was the large bowel.

The other viscera showed no abnormality. Absence of fat was marked, the gastro-colic omentum being diaphanous. The head of the pancreas was so loosely attached that it, together with nearly the whole length of the duodenum, was easily lifted above the level of the abdominal skin. The abdomen was closed.

At the time of writing, one month after the operation, patient could eat ordinary food and did not vomit; the bowels moved daily under paraffin and drachm doses of licorice powder.

During operations the author has observed a number of cases in which the small intestine was either found in, or quickly passed into, a state of tetanic contraction, but in all these the bowel was involved only for a few inches. Sometimes the contracted area, on being bathed with hot saline solution, was seen to relax and assume a normal appearance. No such observation was permissible in this case, the manipulations having produced a marked degree of shock. One hour prior to operation a hypodermic injection of atropine, one-fiftieth grain, had been given as an anti-spasmodic, and the patient was anesthetized with ethyl chloride followed by open ether.

The author states that enterospasm may simulate almost any intra-abdominal lesion, either chronic or acute; and that James Swain had recorded a case resembling acute obstruction in which only spastic intestine was found; also a case resembling perforation of a gastric ulcer in which operation showed no cause for the symptoms. This last patient had previously undergone gastro-enterostomy, nephropexy, and appendectomy. In cases resembling an infective lesion, the absence of an increase in the number of leucocytes is a useful aid to diagnosis.

Mimicry by enterospasm of chronic abdominal affections is not uncommon.

Another case is given of a physician, aged forty-nine, who had suffered from attacks of abdominal discomfort for ten years, sometimes

aggravated into acute pain. The patient was mildly neurasthenic and the attacks followed periods of excessive work or undue worry. They have at different times suggested chronic cholecystitis and a colonic growth, but nothing definite has ever been demonstrable. Patient declined operation. In this case the spasm sometimes involved the rectum and perineum, the patient being awakened in the early hours of the morning by an intense sacro-rectal pain, which was relieved by firm pressure on the perineum and terminated with expulsion of flatus.

The author concludes his article by the following statement:

"Tissues which are diseased frequently need removal, but that asthenia, whether it be of the patient's intellect or of the physician's efforts, should be treated by ablation of organs not obviously abnormal, is a proposition, which I am unable to accept."

Several cases have been reported in which at operation the colon had been contracted with an enlarged portion above this narrowing. Such cases have been reported in both foreign and English literature, but they are unlike our case and do not deserve particular comment, although in these cases on going to operation the contraction was noted to thoroughly relax. There have been no instances reported of an alternating ballooning and contracting of any portion of the colon. The Ochsner Clinic reports that a spasmodic colitis is occasionally seen since x-ray diagnosis of the intestinal tract has become of such general use. In our case there are no evidences of mucosal infection as would be characterized by an abnormal condition of the stool. Dr. Kanavel of Chicago replying to an inquiry states that it may have been from the use of the anesthetic; however, this is contradicted since the x-ray and fluoroscope examination showed the condition before the operation and anesthesia. Examination of the body shows there to be several lipomata, particularly of the forearms, and one on the neck; so that lipomata of the colon was thought of, but no irregularities or unevenness was felt in the lumen of the canal at the time of the operation.

Discussion

Dr. C. C. Coleman, Richmond:

This very unusual case of Dr. Bryan's presents some things of interest to abdominal surgeons. As I understand it, he has a patient who apparently presents a primary malignant lesion of the intestine. He finds on operation that the patient has local spasm, for which he cannot account; has had constant pain radiating down on the side of the body from which a malignant testicle was removed, and down the leg. Of course, after all the study Dr. Bryan has given this case it would be very presumptuous even to make a guess, but I should like to ask him if he has thought of the possibility of this patient's having metastasis of the posterior spinal roots, and connection with the sympathetic nervous system. In recent work

in which an attempt was made to relieve constipation due to marked spasm, it was found by resection of the sympathetics this could be accomplished. It is thought that the sympathetics have a great deal to do with posture, not only of the extremities, but of the hollow viscera. These metastases may be in the inner vertebral foramina, and may be extremely small.

Dr. Bryan, closing:

I want to thank Dr. Coleman. We have thought of that, and have had several x-rays taken designed to show any shadows in the sacrum or ilia which might be of metastatic character. It is interesting to note that this boy has been having this pain since October. Apparently his trouble started before the carcinoma of the testicle started.

The Dead Tooth and What are We to Do About It?

J. A. TAYLOR, D.D.S., Dental Surgeon, Lawrence Clinic, Winston-Salem

Probably no subject has caused more controversy in the ranks of the dental profession than the relative importance of the pulpless tooth as a causative factor in systemic infection.

We do not attempt here to advance any new theory or mode of treatment in dealing with pulpless teeth, nor to contribute anything new to the voluminous literature on the subject, but shall content ourselves with a review of some of the well known findings which are the result of modern scientific investigation.

Is a pulpless tooth dead in the same sense as necrotic or gangrenous tissue, or is it merely deprived, as many claim, of a part of its blood supply? The foregoing question seems to be the bone of contention among the leading essayists of the present day. If we will devote a few moments to a consideration of the matter, it may help us to arrive at some

decision based on the facts.

If we analyze the question even casually, we must conclude that whatever nutrition a tooth receives comes from two sources, the blood vessels of the pulp from within the pericementum from without. Let us see what part of the tooth is supplied by each. We are forced to the conclusion that whatever nutrition, if any, that reaches the enamel must come from the tubuli of the dentine. In like manner, the dentine receives its nutrition from the blood vessels of the pulp and only while this organ is living and in a reasonably healthy state.

This leaves only the cementum to receive nourishment from any source external to the root canal. If then we make sections of a number of normal teeth, it will be seen that this tissue comprises only a very thin layer of the outer portion of the root. While accurate data is lacking, it is reasonable to estimate that it comprises not more

than five per cent of the total substance of the tooth, and furthermore is the only portion which can receive nourishment after the tooth has become pulpless.

The question then is "Shall we consider a tissue as living or safe from pathology when at least ninety-five per cent if it is receiving no nutrition whatever?" Can this thin shield of cementum form a protective barrier between the devitalized portion within and the living tissue external to it? On the other hand, any tissue that does not undergo metabolism must be considered as dead, so we must admit that the major portion of a pulpless tooth is therefore dead. If the tooth then be dead what must become of it? Certainly unless artificial means of preservation be used, it will do just what all living organisms do when they die—undergo decomposition with the resultant invasion of pathogenic micro-organisms and their end products. When this takes place in the body, this infection must be taken care of by the body defenses or there is disease.

In the case of the remnants of the pulp, as well as any blood plasma entering the root canal, disintegration is rapid, resulting in most cases in acute infection. Degeneration of the harder structures on the contrary, is very slow but none the less certain. Here we have a constant source of low grade degeneration lasting as long as the tooth remains in the mouth unless timely measures have been taken to seal all parts of the root in such a manner as to prevent ingress and egress of pathogenic micro-organisms. How manifestly impossible this is, may be seen when it is remembered that not less than ninety percent of all root canal fillings are radiographically imperfect, and more than fifty percent of all treated teeth show definite pathology. This does not by any means exclude those teeth that are perfect from a radiographic point of view, and which will, when extracted, nearly always show an area of necrosis about the root apex if they have been devitalized for some time. It is a safe assertion also that

almost any non-vital tooth root will show infection when cultured. In our own experience, all non-vital teeth cultured showed pathogenic growths.

It is well known among radiologists that radiographic findings are not to be considered final. While positive findings are fairly reliable, negative ones are by no means conclusive. In many cases, the rarefied area may be completely obscured by the shadow of the tooth itself. Furthermore, the most virulent strains of streptococci do not tend to localize and the absence of a shadow may be indicative of more pathology than the rarefied area. A definite granuloma, as Price has shown, indicates a higher defense on the part of the tissues than the lack of such an area when infection is present in both cases.

A further proof of the degeneration of teeth that have remained pulpless for some time is the tendency that they have to crumble under the pressure of the forceps or to snap off at or near the gum line when submitted to luxation. In a very large number of cases, the tooth will also be found to have formed a calcareous union with the alveolar process, portions of which are apt to be brought away when the tooth is removed, the periodontal membrane having atrophied or undergone calcific degeneration. These degenerative changes are seldom associated with vital teeth to any thing like the same extent.

What then may be the result of retaining such teeth? So far as healthy individuals are concerned, dead teeth seem to give negative results only, but just how long such persons may remain in good health is quite another question. It would seem to be up to the individual who has no lesions to decide for himself whether he will take the risk of retaining such teeth provided he has first done all that can be done to render such teeth harmless. He should be fully informed that no dead tooth can be considered tenable until it has been subjected to the most painstaking root canal work.

When we come to consider the patient

who has any lesion of the alimentary or genito-urinary tract, or other evidence of focal infection, such as rheumatism or arterial hypertension, our responsibility does not end until we have done every thing that we can to remove any nidus which may contribute to the lesion. Even though a tooth abscess or granuloma may not be the direct cause of the lesion, it may, nevertheless, add to the difficulty of effecting a cure by constantly adding other strains of organisms to those existent at the lesion.

In our treatment of focal infection cases, we are nearly always able to locate lesions in either the teeth or tonsils, which undoubtedly are a continuing, if not a causative, factor in the ailment. It has further been noted that marked improvement usually follows a thorough cleaning up of any pathological areas in the oral cavity where the disease had not already advanced to such a degree that the secondary lesions were beyond recovery.

In operating for the removal of oral focal infection, it is not sufficient to remove the suspected teeth. A careful survey of the whole area should be made and checked with x-rays, pathological areas located and extractions followed by proper curetment wherever indicat-

ed. Projecting pieces of process should be removed, and the gums sutured where there is a tendency to displacement. It has been our experience that where thorough curetment is done and the gum sutured infection is not only less likely to follow, but the pain is also much less. It is of the utmost importance that the diagnosis and treatment should be in hands of one who is thoroughly familiar with both the anatomy and pathology of the parts with which he is dealing.

And here is a word of caution in regard to the removal of infections. The greater the severity of the infection, or the lower the resistance of the patient, the less should be undertaken at one time. Under no circumstances should a large number of teeth be removed at one time unless the patient is in good physical condition. It is usually better to remove only one or two at a time allowing from two to four days between operations. In this way each inoculation, if not too severe, raises the patient's resistance against the one which is to follow. The disturbing of several areas of infection that have lain semi-dormant for some time may render the infection active and overtax the resistance of the individual, resulting in septicemia or other grave complications.

Oxyuris Vermicularis As a Causative Factor in Appendicitis

W. H. Harris and D. C. Browne, New Orleans (Journal A. M. A., Feb. 28, 1925), record their observations of twenty-two appendices containing oxyuris vermicularis in a series of 121 appendices presented in routine hospital laboratory examination, together with the special consideration of the histopathology of those appendices in which Oxyuris vermicularis infection has been found. The study of the gross and histologic pathologic condition of the appendices the oxyuris demonstrates conclusively that these nematodes possess a definite pathogenic role in the

causation of the appendical lesion. The failure of recognition of the oxyuris as a factor in the production of appendicitis is due in general to the lack of detailed gross and microscopic study of the veriform appendix. It is important in all cases of chronic recurrent appendicitis to consider the likelihood of Oxyuris vermicularis as a causative factor. Aside from the frequency of occurrence of the oxyuris in appendicitis, the widespread presence of these worms in the intestinal tract of adult life is not generally realized. The observations on record of the frequent relationship of the oxyuris to appendicitis justifies a more general and thorough study of this subject.

TRI-STATE BUSINESS SESSION

Thursday, February 19, 1925, 2:30 P. M.

Report of Executive Council

Dr. James K. Hall, Secretary-Treasurer, presented the following report:

The Executive Council met at five o'clock on the evening of February 18, 1925, in private dining room A of the Jefferson Hotel. There were present at this meeting Doctors Bunch, Rinker, Hodges, Stanton, Wallace, Porter, Johnson, and Boice. President McLeod was in the chair. Eighteen applications for fellowship in the Association were approved. About half a dozen resignations during the year were reported by the Secretary.

Southern Medicine and Surgery was continued for a year as the official organ of the Association by contract with its new editor, Dr. J. M. Northington. That journal is to be furnished to the members of this Association for \$2.00 a year per member. The \$2.00 is to be paid out of the treasury of the Association. Dr. Northington briefly outlined his plans and his hopes for the journal, and invoked the sympathetic interest of the members of this body. He stated that the journal will carry no advertising matter objectionable to the Council on Pharmacy and Chemistry of the American Medical Association.

Various members of the Council spoke on the desirability of giving thought to some method or methods looking to the increase of the membership of this Association. It was suggested that each member of the body make a persistent effort each year to bring into the Association at least one new member. A committee whose function it shall be to formulate plans for increasing the membership was appointed by President McLeod, as follows: Dr. F. C. Rinker, Dr. J. M. Northington, and the Secretary-Treasurer.

The terms of service of Doctors J. W. Long, George H. Bunch, and F. C. Rinker have expired as members of the Executive Council, and in their places the following members were elected: Dr. Z. G. Smith, Marion, S. C.; Dr. William Al-

lan, Charlotte, N. C.; Dr. H. S. Belt, South Boston, Va. (Note: The Council fills its own vacancies).

The Treasurer reported as having on hand about \$1,000. The Association has a membership of about four hundred. It should be increased to one thousand.

A number of members appeared before this meeting of the Executive Council requesting that the next meeting be held in Fayetteville, N. C., and a number appeared also begging that the next meeting of the Association go to Charlotte, N. C. The various spokesmen were heard, and the Council was impressed with the earnestness and cordiality of these two invitations. Each invitation came not only from the local medical society, but it was backed up by all the civic organizations in each city. Inasmuch as Charlotte was to complete her invitation at night by radio, the Council made no recommendation with reference to a meeting place.

At one o'clock today in this hall the Council met again in adjourned session. There were present Doctors Rinker, Hodges, Wallace, Johnson, and Boice, with President McLeod in the chair.

The Council recommends unanimously that the invitation extended by Fayetteville, N. C., be accepted. The Association either accepts or rejects this invitation, but the Council wished the Association to know that the Tri-State has not met in the east of Raleigh, has not met in the eastern half of North Carolina, since 1914. A few years ago it was necessary for the Association to meet in only a few of the towns in North Carolina, because of limited hotel facilities, but within the last few years a number of excellent hotels have been opened in some of the smaller towns in North Carolina, as this Association had a very good illustration of a year or two ago at the meeting in High Point.

A resolution was adopted unanimously by the Executive Council requesting permission of the Association to place a time limit of fifteen minutes on the reading of each paper except those pa-

pers constituting a part of a symposium, in which case ten minutes should be the time limit for each paper, and that the Association grant the Secretary the right to place as many as forty papers on the program for the next meeting. The Council thought that by grouping a good many papers in symposia, in which case there would be no discussion until the symposium is completed, and by placing a time limit of fifteen minutes on papers read not in a symposium, it would be possible to handle forty papers at the next meeting.

The Council adopted a resolution, also unanimously, expressing the hope that the all-time salaried professors in the various medical colleges in the three states might be requested to seek membership in the Association, and, in that case, that they be charged no fees or annual dues of any kind. The Council feels that the membership of the Association needs from year to year the specific technical knowledge that these all-time, highly trained men have, and that they will be conferring a favor on the Association by coming to it from year to year and giving the membership the benefit of their knowledge.

Dr. Stuart McGuire, of Richmond, Va., moved that the report of the Council be received and adopted. This motion was seconded by Dr. S. O. Black, of Spartanburg, and unanimously carried.

President McLeod:

The Council has gone into this matter very earnestly in its desire to extend the influence of the Tri-State Medical Association, and the first thing to do, of course, is to increase our membership. The Council this year has decided that it will appeal to every member of the Association and in turn ask him to bring in new members. This, of course, is the easy and logical way to increase our membership. If that fails we shall have to put on some other form of solicitation, but we believe if the members themselves will make the proper effort as individuals we shall be able to increase our numbers. We have fewer than four hundred; we should have a thousand. The Tri-State Medical

Association at every meeting has demonstrated its usefulness, and the splendid interest demonstrated in this meeting has been most wonderful, and I feel that we should do all we can as individuals to extend our influence.

In cutting down the time of papers from twenty minutes to fifteen minutes, the Council took into consideration that if a man had a twenty-minute paper he could omit part of it, which would appear when published in the official organ. If the individual papers appear on the first day and the group papers on the second day we think it will work out.

Election of Officers

President McLeod called for nominations for President, and Dr. B. R. Tucker, of Richmond, nominated Dr. W. Lowndes Peple, also of Richmond. This nomination was seconded by Dr. R. L. Payne, of Norfolk, and also by Dr. J. T. Burrus, of High Point, N. C. Dr. Southgate Leigh, of Norfolk, moved that the nominations be closed and that the Secretary cast the unanimous vote of the Association for Dr. Peple, which motion was seconded and carried.

The President appointed Dr. Tucker, Dr. Burrus, and Dr. Black to escort the new President to the chair.

President McLeod: I wish to present you with the gavel, which is the only emblem of authority you need, for you will have the hearty co-operation of every member of this society.

Dr. Peple: Mr. President and gentlemen: I cannot tell you how deeply I feel the honor you have conferred upon me. It is an honor indeed, because I have always felt that the Tri-State Medical Association is the strongest influence that the medical profession has in the South. I have gotten more personally from the meetings of this society in the various cities than from any other meeting I have been privileged to attend. I accept the office in all due humility, and shall try my best to carry on the work of this Association with the help of my young friend, the perennial secretary.

Vice-President from Virginia. Dr. A.

L. Gray, of Richmond, nominated Dr. R. L. Payne, of Norfolk. Seconded. On motion of Dr. Stuart McGuire the nominations were closed and the Secretary cast the unanimous vote of the Association for Dr. Payne.

Vice-President from North Carolina.

Dr. C. S. Lawrence, of Winston-Salem, nominated Dr. J. T. Burrus, of High Point. On motion of Dr. S. O. Black, seconded by Dr. A. J. Crowell, the nominations were closed and the Secretary cast the vote of the society for Dr. Burrus.

Vice-President from South Carolina.

Dr. Roy P. Finney, of Gaffney, was nominated by Dr. S. B. Sherard, of Gaffney. Seconded by Dr. Coleman. The nominations were closed, on motion of Dr. Black, and Dr. Finney was unanimously elected.

Secretary-Treasurer. Dr. James K. Hall was nominated and unanimously elected. (Applause).

Dr. McLeod: Dr. Hall, that is the way we feel about it. We feel that you more largely represent the Tri-State Medical Association than any other person. We shall be glad to hear from you.

Dr. Hall: I was nominated originally when I was out of the hall. I think it was Dr. Gray that did this thing to me. I hardly see how I can help from responding to this expression. I am terribly busy and covered up with a great many things, but for the next year, one more year, I shall do my best. This is a wonderful body of men to work for and with. It is an inspiration to be associated with you. I thank you for the unmerited honor conferred upon me.

Dr. Davis Furman, Greenville, S. C.: I have found this one of the most interesting meetings and one of the most valuable I have ever attended, and I feel that we should extend a vote of thanks to those who have made it so successful. I offer that as a motion.

Seconded and carried.

Dr. Hall: Since this Association was in session last the editorship of the official organ has passed from Dr. M. L. Townsend, to whom, I am sure, we owe a vote of thanks for keeping that jour-

nal alive, to Dr. J. M. Northington. He is in living form Southern Medicine and Surgery, and every year you will see his personality spread out over its pages. If it pleases you, let him know it; if it does not, be sure to let him know it. There is no reason I know of why a good, live medical journal should not continue to exist in North Carolina, and I hope the members of this Association will continue to make that journal more and more useful. That is his hope, his purpose, his plan. We owe it to him and to ourselves, as members of this body, to help him.

Officers of the Tri-State Medical Association, 1925

President—Dr. W. Lowndes Peple, Richmond, Va.

Vice-Presidents—Dr. R. L. Payne, Norfolk, Va.; Dr. Roy P. Finney, Gaffney, S. C.; Dr. J. T. Burrus, High Point, N. C.

Secretary-Treasurer—Dr. J. K. Hall, Richmond, Va.

Executive Council

One Year Term—Dr. F. M. Hodges, Richmond, Va.; Dr. D. A. Stanton, High Point, N. C.; Dr. W. R. Wallace, Chester, S. C.

Two Year Term—Dr. W. B. Porter, Roanoke, Va.; Dr. F. B. Johnson, Charleston, S. C.; Dr. E. S. Boice, Rocky Mount, N. C.

Three Year Term—Dr. Z. G. Smith, Marion, S. C.; Dr. William Allan, Charlotte, N. C.; Dr. H. S. Belt, South Boston, Va.

Tri-State Applicants for 1925

1. Bidgood, Charles Young, Medical Arts Building, Richmond, Va.

2. Boddie, N. P., Durham, N. C.

3. Corbett, J. W., Camden, S. C.

4. Dodson, A. I., 617 West Grace, Richmond, Va.

5. Faulkner, D. MacK., Medical Arts Building, Richmond, Va.

6. Fravel, R. C., 1000 West Grace, Richmond, Va.

7. Graham, J. T., 1000 West Grace, Richmond, Va.

8. Grinnan, St. Geo. T., 925 West Grace, Richmond, Va.

9. Highsmith, James Da Costa, Fayetteville, N. C.
10. Kluttz, De Witt, Washington, N. C.
11. Murphy, Douglas Power, Ruth-erfordton, N. C.
12. Phillips, C. C., Charlotte, N. C.
13. Scott, Charles L., Sanford, N. C.
14. Spicer, Richard Williams, Win-ston-Salem, N. C.
15. Stirling, W. Calhoun, 1720 Q St., N. W., Washington, D. C.
16. Taylor, Erasmus H. E., Broad-oaks Sanatorium, Morganton, N. C.
17. Verdery, William C., Fayette-ville, N. C.
18. Warren, William E., Williamston, N. C.
19. West, Thomas M., Fayetteville, N. C.

A Graceful Tribute and a Gracious Response

At the dinner of the former presidents of the Tri-State Medical Association at the recent meeting in Richmond a letter of cheer and good wishes was addressed by the former presidents to Dr. George Ross, the Nestor of the medical profession of Richmond. Following is a copy of the poetic response of Dr. Ross to the good wishes of his profes-sional brethren.

Eighty-six years is long to have lived
In a land where transition is writ;
Eighty-six years is short to have lived
For eternity's span to grow fit.

Eighty-six years must a record unfold
In the life of the purest earth treads,
Shadowed, too often, by tears and re-grets,
So enwrap is man's future in dreads.

Eighty-six years I have bravely marched
on
Through the sunshine of life and its
sorrows;

Eighty-six years I have fought "a good fight,"

And still fearlessly fight for life's
morrrows.

Eighty-six years I have stood for the things

That prove character manhood's best
prize;

Eighty-six years old this day, and de-
clare

That in faith, hope and love I await
God's assize.

Geo. Ross, M.D.

The statements of various authors re-garding the stability of mercurochrome solutions have been investigated by Loeser, Hamburger, and Konwiser. In experiments extending over a period of nine months, an intravenous solution of mercurochrome, 220, has been thorough-ly investigated.

It has been demonstrated that 1 per cent solution; prepared by the Loeser method, remains stable over a long pe-riod of time in hermetically sealed, non-soluble glass ampoules. At monthly in-tervals the solution was injected into white rats intravenously, while control animals were injected with a freshly prepared solution. These tests show that no change had taken place in the solution, and that the toxicity had not increased after nine months. Bactericid-al tests made with this solution, when six months old, indicated that there was no loss of bactericidal power.

These tests were part of the experi-ment work of preparing a standardized, biologically tested, stable 1 per cent solution of Mercurochrome, to be offered to the physician in 20cc. ampoules ready for injection. Clinical data and thera-peutic references have been gathered for distribution by the New York In-travenous Laboratory, 100 West 21st Street, New York City.

SOUTHERN MEDICINE AND SURGERY

Official Organ of the Tri-State Medical
Association of the Carolinas and Virginia

Published Monthly by the

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Jas. M. Northington, M.D., Editor

CHARLOTTE, N. C.

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*A journal for the promotion and diffusion of
usable medical knowledge.*

Marshall Hall Fletcher

Since ability to write after some fashion has become the rule, instead of the privilege of the priesthood and a few others, it is rare for one to die and fail of memorialization in written words. These tributes range in grade from the eulogiums pronounced by the most gifted orator or poet, amidst all the "boast of heraldry and pomp of power," which wealth and influence can command, to the pathetic effort which appears in the county newspaper stating in halting rhyme the grief of an humble and little-lettered mother for her dead child.

Those in the latter class are always sincere, and, for this reason, much as their literary style may jar on refined sensibilities, they deeply touch our better natures. Unfortunately many of the former, however, they may be glossed over by artificial aids, are so plainly insincere and empty, so evidently the loading of a spurious worth with the trappings of the real, as to have engaged the pens of satirists of every land. So many of those so lauded attained to their wealth and positions of prominence and influence by

pursuing courses dictated by policies in which unscrupulousness was the largest ingredient, and so had risen, not "on stepping-stones of their dead selves," but by making stepping-stones of the necks of better men, that even the kindly-disposed are often inclined to greet post mortem praise of a prominent man with a shrug.

The subject of this sketch would have been the last to think of himself as a great man. He was an earnest student, a conscientious practitioner, a loyal friend and citizen, and an upright man.

Resolutions passed by his own county medical society and printed in another column, testify abundantly to credit in all these characters. I knew him most as a soldier. Do I hear a ripple of laughter at the idea of a doctor being a soldier, and some whisper of "non-combatant?"

He was, in years, far past any possibility of the draft. he could have worshipped his Lares and Penates, quietly and profitably during his countries' stress, without incurring a word of censure; or, had he desired merely a military title, with its opportunities for advertisement, and without loss of opportunity of sharing in the unprecedented harvest of gold brought to his sickle by fortuitous circumstances, a bare suggestion to any one of many in high places would have brought "the imprint of the King's ring" by return mail.

He chose rather to enlist for active service, to follow the routine, to stand in line and take his turn, depending on his own unaided merit for enlargement of his opportunity for service as measured by rank. Many times when superior officers excused him from arduous tests, such as long hikes under heavy packs, he would smilingly keep his place; and he was even known to fall in at another part of the line, after being ordered out of the formation through consideration for his age. Every duty assigned was discharged with the utmost fidelity and cheerfulness, however far it might fall short of his reasonable expectation.

His career, in part confutes, in part sustains, the satirist who would have it

that, to attain place and power, one must seek to enlist and retain the influence of the mighty; that he must "crook the pregnant hinges of the knee, that thrift may follow fawning."

Dr. Fletcher was chosen president of the Medical Society of his State; his standing at home is attested by the resolutions of his confreres. These honors he attained to by the merit system. How far or high he might have gone, had he sought preferment, no one will ever know. The record of his life is an inspiration to those who stand for honest effort.

Careless Medical Nomenclature

At one time the medical world had attained to a fair degree of success in its effort to delete from its nomenclature meaningless and misleading words. "Acute rheumatism" gave place to "acute rheumatic fever"; "dropsy" lost the place it had occupied in nosology and was placed where it belongs, among the symptoms; "biliousness," "dyspepsia," "indigestion," and "catarrh" practically dropped out.

Now it would seem that we tend toward recklessly throwing away the advantages we have gained through long and patient toil. We are afflicted with not only a recrudescence of the old vexatious verbal nondescripts, but a horde of new ones as well,—or, as bad.

In a brand new book by a copious author, I find "biliousness" defined and treated. Inasmuch as this is the first definition of the term which has come under my eye in a medical work of recent years, it is here given: "This is a term used to designate a state which presents different symptoms in different cases, (sic) but always includes languor, headache or dizziness, perhaps some yellowing of the skin and conjunctiva, and a general sense of atony, mental depression and discomfort." "Catarrh" of the respiratory, alimentary and genito-urinary tracts is discussed. In one of the local papers there appeared some months ago under the head-line "Berlin, Dec. 5:"

"Radio Rash" is Europe's newest af-

fliction. It is an eruption of the tender skin of the ears of wireless devotees resulting from the constant pressure of the hard rubber head-pieces. Dr. Marcus of Vienna, writing on the subject for the Clinical Review, says the rash, while very annoying, is not serious when attended to very promptly.

Use of soft rubber "ear muffs," which fit over the hard ear-pieces, is suggested as a precautionary measure."

During the recent war the medical men were harassed and the whole army handicapped, by reason of the use of such terms as "flat-foot," "soldiers' heart," and "shell-shock." For this entirely needless hindrance the medical men and newspapers should share responsibility. And certainly the newspaper correspondent who dilated at every opportunity on the horrors of being "gassed" or the "terrific, nerve-shattering effects of high-explosives" served the enemy well by putting an enormous number of our men out of commission,—many as patients with so-called "shell-shock," or greatly exaggerated ideas of the injury they had suffered from some gas, and many more to see after these.

Remarking on the unwisdom of the term, Sir James Mackenzie is said to have expressed himself to the effect that, "shell-shock had been used to cover every disorder of a soldiers' nervous system from total paralysis to simple cowardice."

If mere flatness of the feet incapacitated a man for the duties of a soldier, many more of us Anglo-Saxons would have seen our service on labor details, for the great majority of the Afro-Americans present this anatomic peculiarity. Incidentally the flattest pair of feet it has ever been my fortune to see belonged to a doctor who presented himself, in the early weeks of the war, for examination as a step in the process of becoming a member of the Medical Reserve Corps. When I looked at his feet he promptly said, "there's nothing wrong with those feet; they've always been flat and they took pretty near all of the prizes in athletics in college," and he promptly sprang up at least four

feet landing on the balls of his feet! He passed promptly.

Examiners for the Veterans' Bureau, when confronted with a diagnosis of "soldiers heart," can hardly deny that this man is, or has been, a soldier and has more or less of a heart. It is so vague that it cannot be refuted; and this very vagueness makes it worthless. Then we have at least two definite clinical entities masquerading under the name "sleeping sickness," to say nothing of the scores of other diseases which are dismissed, in an off-hand way, with this designation, at any time when the public prints are carrying scare head lines concerning the subject.

These vague terms may mean so little or so much that there is no nailing an opinion and ascertaining what, if anything, it means. They are used mostly by the thoughtless; but these always preponderate.

Take, for instance, the usual hair-raising newspaper descriptions of the horrors of modern warfare, with the plain suggestion that human nature could not be expected to stand them. Most readers, and many soldiers, accepted this as reasonable statement, and offered all kinds of excuses for those who ran away from the conflict. Now consider warfare not so modern, and in which high-explosives had no part, when men fought hand-to-hand, with spears, battle-axes, two-handed swords and curved knives. It is said that Alexander the Great owed many of his triumphs to his having the sense to order that his men have their beards trimmed so close that their adversaries could not get a firm grip thereby, while digging into their interiors with whatever tool happened to be in the grasp of the other hand. But nobody ever heard of "spear-shock" or "battle-axe-shock"; and when a soldier could not, or would not, stand the gaff he was called plain "coward," and treated accordingly.

No doubt many such soldiers have some definite disease of the nervous system which entirely removes any suggestion of stigma from their records; but clearly, it is not "shell-shock." Moreover, unless he was belied, on at

least one occasion, that redoubtable warrior, J. Caesar himself, funk'd pretty badly, and—"his coward lips did from their color fly"; so possibly "periodic" or "temporary cowardice" may be a disease from which the most valiant are not altogether free.

Anyhow it behooves the medical man to diagnose the condition of every patient coming under his care as accurately and completely as it lies in his power to do, and to record his findings and opinions in words which have meanings, and which, moreover, do not readily lend themselves to sensational usage to the certain confusion of the unthinking and the retardation of the progress of medical knowledge.

The Tri-State Meeting

The recent meeting of the Tri-State Medical Association was of the heartening kind. The arrangements were excellent, one reason being, there were not so many of them. The evidences of foresight and forecare on the part of officers were abundant and gratifying. The Secretary functioned as he always does—wonderfully; and the President, besides making an inspiring speech, presented a record of real achievement during his term of office, and besides well-thought-out plans for enlarging the activities of the association.

Our new President is an enthusiastic believer in the worth of the Tri-State. His great abilities, his energy and his wide popularity assure him a successful administration.

The scientific programme,—which embraced the whole of it,—was of the first order. Seldom have three addresses of such value been presented to one meeting as those of our three invited guests, Drs. Thayer, Hartwell and Brown. Each dealt with a subject of vast concern to medicine, and each in a masterful, instructive and convincing way.

The essays of our members measured up to a high standard. None was read by title; only one by another than its author, and this because of the enforced

detention of the writer.

On every hand was the sentiment expressed, "This is the best medical meeting I have ever attended." Plans are this association; and, with the enthusiastic cooperation of all its members, a large success is assured.

PITUITARY EXTRACT

There are a good many pituitary extracts on the market, scarcely two of them alike in activity and, consequently, dosage. In fact the same preparation may differ at different dates by as much as 50 per cent if improperly made, carelessly exposed to the light, or kept too long under even favorable conditions. Pituitary extracts should be dated, and the ampoules should be kept in their

cartons till needed. It goes without saying that the date stamped on the package should be consulted.

A pituitary product that has won an enviable reputation because, for one thing, it was the first in the field, and for another because the standard of activity applied to it is such as to make the average obstetric dose 1-4 to 1-2 cc. (4 to 8 minims), is Pituitrin, P. D. & Co. Pituitrin is tested, we are told, by two methods, to demonstrate, respectively, its effect on blood pressure and its effect on uterine tissue.

A new booklet on "Pituitary Therapy," covering not only Pituitrin but preparations of the anterior lobe of the pituitary body, and of the whole gland substance, is offered to physicians by Parke, Davis & Co., Detroit, Michigan.

DEPARTMENTS

Mental and Nervous

JAMES K. HALL, M.D., *Editor*
Richmond

The Doctor and Mental Disease

One is increasingly impressed with the disinclination of the general physician to go into the diagnosis of a mental condition. He usually modestly disclaims any knowledge of such disease and asserts without evidence of professional embarrassment his inability to deal with the situation. The patient is generally transferred without delay to a special hospital, the physicians of which may know more of technical psychiatry than the family doctor, but they certainly know less about the particular patient than his private physician knows about him. As a rule, too, this intimate knowledge of the patient's make-up is never fully conveyed to the specialist. It cannot be. Mere words are poor vehicles in which to transfer intimate information about a person's life from one to another—even from

one doctor to another doctor. Each of us knows in rather satisfying and profound fashion many things about our acquaintances which we could not in any full sense convey to a stranger—even to a doctor who is anxious to know.

All physicians who are engaged in hospitals in the treatment of mental patients are more or less handicapped in their work by the apparent know-nothing attitude of family physicians with reference to disorders of the mind. The family doctor does, as a matter of fact, know much about the mental condition of his patient—much indeed that the psychiatrist can never know. The psychiatrist, not furnished with this knowledge, is handicapped in his management of the patient.

Why should the general practitioner seem to be indifferent about the features of a mental condition arising in his practice? He is keenly alive to the general features of the normal condition not only of all his patients but of most others who live within the terri-

tory in which his art is applied. As the psalmist says, he knows their down-sittings and their uprisings. The family doctor is the very first one, as a rule, to recognize the slightest degree of departure in feeling and in behavior from the individual's normal. He senses the change as quickly as the mercury in the tube senses atmospheric temperature change. But difficulty is encountered in persuading the doctor to formulate in words what he knows about the individual's condition. He pleads unacquaintance with the terms made use of in talking about disorders of the mind. And many of the terms are overwhelming. They repulse by their size and unprouncableness and strangeness of sound. They often convey no more meaning to a well-educated person than a chemical equation would to one unversed in the symbols made use of in that science. It should not so be. The profound things of life are discussed both illuminatingly and entertainingly and altogether understandingly in the great literature of the world—in the Bible, for instance, and in Shakespeare, in Bacon, and by other great essayists. The masters themselves are comprehensible; their commentators are difficult to understand. It is a matter of more importance to society and to medical progress that a thorough understanding be had of adolescent insanity than it is to quibble about *dementia praecox* and *schizophrenia*. It is better to apply simple terms to a complex problem than to produce confusion and mystification about it by the application to it of strange, new, incomprehensible words and phrases. For the very reasons referred to above one can easily understand why the observant and studious family doctor finds it impossible to believe that mental diseases are within the range of his understanding.

Contributors to those journals that deal with these matters wittingly or unwittingly repel from perusal of their pages the very doctors who see mental diseases being born. Many text-books on psychiatry make use of vocabularies so technical in meaning that only those who do not need to study them can un-

derstand them. There is a distinct and pressing need for a book on mental diseases written in plain, simple, short words that any intelligent, fairly well-educated person can understand. The general practitioner would make use of such a volume. He and society and mentally sick folks would be helped by it. Mental medicine would make progress on account of such a book.

Doctors should be encouraged to understand that abnormalities of feeling and of thinking and of behavior are manifestations of disease, and that as such they are no more mysterious than fever or pain, albuminuria or desquamation, vomiting or diarrhoea, dropsy or cyanosis, stuttering or wristdrop. Everything is a mystery. Going backward along the pathway made by any event one comes sooner or later up to an impenetrable wall through, around, or over which the understanding mind cannot go. But the application to a poorly-understood situation of a large, mouth-filling, well-sounding term implies usually no increase in knowledge of this problem.

Those physicians who are devoting their lives to an attempt to evaluate human behavior and to reach some understanding about its origin and the causes that tend to bring about modification of conduct will render a large and helpful service to their labors by enlisting the hearty support of general practitioners. To this end it is to be hoped that the writers on mental diseases may be induced to understand the wisdom of making use of simple, non-technical, easily understood terms. Psychiatrists who address general medical meetings should certainly make use of such words only as all doctors understand.

Gynecology and Obstetrics

ROBT. E. SEIBELS, M.D., *Editor*
Columbia

Syphilis and Fever.

When the etiology of an obscure pyrexia is being sought the part that syphilis might play is seldom thought of. In the puerperium particularly the attending physician is looked on with sus-

tion if he ascribes a rise in temperature to other than septic causes. It must be admitted that the dreaded and dreadful "child-bed fever" is all too commonly the cause of postpartum rises in temperature, but other factors must be eliminated when possible, both during the course of the pyrexia and in later years when a history of febrile puerperium is obtained. Pyelitis and malaria must certainly be considered.

Voron and Grivet report the case of a woman who had a normal second delivery, and on the second day her temperature rose to 102.2. On account of premature rupture of the membranes, infection was suggested at once, but involution was normal, the pelvis was negative, as were the cultures for streptococci. The fever continued for three months and not until there was a general eruption was syphilis thought of. A positive Wassermann confirmed the diagnosis and treatment with arsenic was followed promptly by normal temperature.

Puerperal fever is, and should be, a reflection on the obstetrician, but a thorough search may clear him of blame. Voron and Grivet (*Int. Abs. Surg.*, 1924, 537).

Tuberculosis Salpingitis

The following figures are taken from a study made by Wahl (*Surg. Clinics N. A.*, 1923, iii, 1557).

Occurrence: Among 216 pathologic tubes, 11 were definitely tuberculous. It is more frequent in negroes than in whites, and appears between the ages of 20 and 40. Antecedent tuberculosis in other organs is not always found; nor are recent lesions in them common.

Pathology: Peritonitis is local about the tube, and tubal infection seems to play a minor role in the causation of diffuse peritonitis. The infection is bilateral as a rule; when unilateral it is more frequent on the right. The tubes are the most frequent site, then the uterus, and the ovaries least. There are three types: (1) Chronic salpingitis with adhesions; (2) Chronic pyosalpinx—the lumen being filled with thick, green or yellow pus, and the wall case-

ous and granulomatous, this being the usual lesion; and (3) the serosa being covered with tubercles and the peritoneum generally infected.

Symptoms: The subjective symptoms are markedly less than the clinical findings would appear to warrant—sense of weight in the pelvis, loss of strength, occasionally some pyrexia. Amenorrhea and sterility are frequent.

Treatment: Because of the frequency of associated uterine infection, the uterus should be removed along with the tubes, but the ovaries may be conserved in selected cases. The post-operative course is not infrequently stormy and complicated by abdominal fistulae. The general hygienic treatment of tuberculosis should be instituted after operation.

Prognosis: This is good when the process is limited to the adnexa, but is grave when there is an active lesion elsewhere or there is extensive involvement of the peritoneum.

On account of the difficulty of diagnosing the tuberculous origin of the salpingitis from the gross specimen as well as from clinical signs—in this series the positive diagnosis was made only once in eleven cases—the necessity for the routine study of tubes in section is apparent.

Orthopedic Surgery

O. L. MILLER, M.D., *Editor*
Charlotte

Congenital Club Foot

A group of orthopedic surgeons in Boston headed by Robert B. Osgood brings out at intervals a treatise called, "Report of Progress in Orthopedic Surgery." In this they review a large number of articles dealing with bone and joint conditions appearing in medical literature of all languages, and all of comparatively recent writing.

These reports have been numbered serially as they have appeared. In the September issue of *Archives of Surgery*, and also recently in reprint form, has appeared the twenty-fourth of this series. This last publication deals with congenital conditions and represents the au-

thors' conclusions from the review of three hundred and eighty-seven articles.

The value of such a type of extensive abstracting is in its bringing to us in condensed form the latest sum-knowledge on a variety of subjects, both for diagnosis and for treatment.

One congenital condition dealt with which appears quite constantly in the human family is congenital club-foot. The etiology of this condition is not known. Even to this time there is still some difference of opinion as to the management of this deformity, and we are here attempting to set forth what in our opinion is the accepted teaching in regard to treatment, and the method of management giving the most normal-looking and most useful foot in the end.

The deformity may be unilateral or bilateral. Where a congenital club-foot occurs both the baby and the mother should be allowed to recover from the experience of labor before this tedious treatment is begun. Gradual stretching of the feet in the direction of correction is allowable in a healthy baby during its first two to four weeks of life. It is hardly fair or necessary to do more.

By the end of the first four to six weeks both the mother and baby are fit to begin the ordeal of treatment. This is the proper age to gently but constantly carry the feet toward correction. If the treatment is seriously begun now no time has been lost. Carefully applied plaster casts have had no successful substitutes as the method of holding the feet during treatment. They are usually applied over sheet wadding, and, instead of removing them at each adjustment, it is best to cut out a section of the cast at the ankle, carry the toe cap a little further outward and upward, and apply plaster to hold the new position (called "wedging casts"). The cast should be changed every two to three weeks and should extend up the limb to mid thigh.

This method of treatment, intelligently persisted in, will carry the majority of the feet into abduction and dorsi-flexion—the position sought. It

will usually take from two months to a year to get a satisfactory result—a well shaped foot that will not relapse.

It may be necessary to do one or more forcible manipulations under anesthesia. It may be necessary to do tenotomies or fasciotomies. Fasciotomies may be done subcutaneously, but heel cord tenotomies should be done "open," and the tendon made to slide on itself so as not to lose continuity. All of these operations are to be avoided so far as possible and used as a last resort, as they create scar tissue and often hamper the end result. Patience, persistence and co-operation on the part of surgeon and family are necessary.

The club-foot not treated at the ideal age is managed in much the same way when it is presented. That is, the contracted structures should be slowly stretched and not hurriedly cut. This will give the best looking and best functioning foot in the end. While the earlier the foot is taken the easier the treatment, still there is no closed season on the condition. It can be treated at any age. The old advice of letting the child go until a year old, or older, before beginning treatment, only makes a situation more difficult for the surgeon and more painful for the patient.

The older cases require more extensively plastic operations and more major operating to get improvement in the shape of the foot. Bone plastic operations are frequently necessary in the tarsus and the tibiae of the neglected cases.

A foot properly corrected does not need a brace. The treatment should be continued until the foot is in a slightly over corrected position and the torsion is out of the tibiae. Strong straight-last shoes with lifts under outer border of soles aid the correction when a child starts walking. A satisfactory result is often difficult to obtain but should be possible. It is a reflection on the profession and modern welfare work to have a child going about now with an uncorrected club-foot.

Surgery

A. E. BAKER, SR., M.D., *Editor*
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For many years abdominal surgery was confined principally to the organs of the lower abdomen. This field of surgery has practically been settled, but now it is the right upper abdomen we are most concerned about. The difficulty of making a correct differential diagnosis is due to the varied pathology of the organs in this region which often produce similar symptoms and again the probability of referred symptoms must be considered. Whereas the x-ray and test tube are factors in making a diagnosis, yet they are disappointing in their reliability, except in peptic ulcers, in which the x-ray demonstrates about 95 per cent.

Pertaining this whole subject Dr. J. B. Deaver has written a most interesting article. The following is an abstract of his paper on "Some Practical Points in the Consideration of Disease of the Right Upper Abdomen." He states that:

In the order of their frequency, the most important pathological conditions arising in the upper part of the abdomen on the right side are inflammation of a high-lying appendix; infection of the biliary tract, including the pancreas; acute and subacute perforation of ulcers; and sub-diaphragmatic abscess.

The diseased appendix may mimic almost any of the diseases of the right upper abdomen because of the variations in its position. If it points upward, the pain will be referred in that direction and will often so closely simulate disease of the gall bladder that a diagnosis will be practically impossible. Sometimes the end of the appendix, the gall bladder, the duodenum, the pylorus, and the head of the pancreas are close together, and the symptoms may suggest disease of any of these viscera. In acute perforation it closely resembles that of acute perforation of a gastric or duodenal ulcer.

The differentiation depends chiefly on the history. In appendicitis there is first a general abdominal pain which is cramp-like but not very severe, and referred to the epigastrium. This is soon followed by severe pain and board-like rigidity. In cases of ulcer the severe pain comes on very suddenly without premonitory symptoms. If the history is that of ulcer, the diagnosis may be made with more confidence, but not infrequently there is no history of previous trouble. In 90 per cent of cases a sudden attack of agonizing abdominal pain followed immediately by board-like rigi-

dity of the abdominal wall means a perforated ulcer.

The operation that will give the best immediate and remote results is closure of the opening and posterior gastro-enterostomy. Deaver has tried more closure of the opening, but he is convinced that unless the case is a late one with advanced peritonitis, the addition of a gastro-enterostomy is best. This operation relieves the tension on the site of the perforation, places the area at rest, and reduces the danger of leakage, which is not inconsiderable even after careful closure because of the induration and friability of the tissues at the site of the ulcer. Simple closure of the perforation requires the cutting away of all of the indurated area, and often this is not feasible.

In subacute perforated ulcer there is a history of prolonged trouble in attacks and finally a comparatively acute exacerbation of pain at the time of perforation, followed by a circumscribed peritonitis resulting in continual soreness in the epigastrium and upper abdomen, constant distress after meals, rigidity of the muscles, and tenderness to deep, if not to moderate, pressure. This condition is often deceptive and not infrequently is mistaken for a chronic gall bladder or pancreatic condition or chronic inflammation in a high appendix.

Biliary tract infection most commonly attacks the gall bladder causing either a catarrhal inflammation of the mucous membrane or an interstitial inflammatory process which sooner or later manifests itself in recrudescence of the attacks, the formation of gall stones, and gradual involvement of the pancreatic lymph nodes and pancreas. Involvement of the pancreatic lymph nodes can be determined only at operation.

Uncomplicated chronic pancreatitis can be diagnosed in most instances only by palpation and inspection of the exposed organ. The syndrome is somewhat as follows: marked indigestion, fulness, belching, tightness of the upper abdomen, and occasional, paroxysmal pain in the epigastrium or right hypochondrium, which may radiate in various directions. Vomiting is more frequent than in other chronic digestive disorders. Jaundice is not characteristic, although it is sometimes present, the stools then being clay colored. It is never absolutely complete. In most cases of chronic pancreatitis, jaundice is due to gall stones.

Deaver has not found the various tests, including duodenal drainage, of any value. Assuming that biliary tract infections originate in the liver with secondary infection of the tract and pancreas, he believes that nothing other than wide open drainage is logical.

Jaundice in biliary tract infection is intense only in the presence of calculi.

lous and neoplastic obstruction, and occasionally in cholangitis and pericholangitis. Relief of this type is accomplished only by drainage of the gall bladder or common duct or by a cholecysto-duodenostomy. Not infrequently Deaver has found the stoma of a cholecysto-duodenostomy closed; therefore it is his practice to make the opening as large as the size of the gall bladder will allow. In a number of cases of diffuse interstitial pancreatitis he has not only drained the common duct with a T-tube, but has performed a cholecysto-duodenostomy in addition.

To effect a cure in pancreatitis prolonged drainage is necessary. Deaver has left the tube in place for as long as four years, and never removes it before the end of six months. Usually persons with this condition have suffered a long time and have tried various medical methods of cure as well as hydrotherapy and heliotherapy. Surgery is indicated early.

Subdiaphragmatic abscess is often difficult to diagnose. In some cases the use of the x-ray and an aspirating needle may be necessary. Palpation will usually elicit tenderness significant of the location of the collection. An important sign differentiating a subdiaphragmatic collection from a subhepatic collection is marked tenderness to finger pressure.

Visceroptosis and colitis are other causes of lesions in the upper abdomen. Deaver does not advocate radical surgery of these conditions as he hesitates to enter uncertain fields where the operation does not attempt to relieve the pathology, such as is the case, for instance, when periarterial sympathectomy is done in the treatment of endarteritis.

Pediatrics

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Universal Breast-feeding

When one has surrendered himself to the dangerous joys of hobby-riding, he soon begins to look around him (as did the fox who had lost his tail!) to see if

he cannot see signs of a similar weakness on the part of his friends. If this column has one faithful and persistent reader, that somewhat easily satisfied soul must know that the hobby most frequently and most furiously ridden here is that of universal breast-feeding. It is only natural, then, that wherever a sign appears that others are beginning to become keenly interested in the child-saving possibilities of this bit of preventive pediatrics, the fact should here be chronicled in as large type as can be spared for the purpose. The fact that the Health Department of one of our large states has become seriously interested in this movement, to the extent first of working out a definite community technique for application wherever it is desired to put it on, and second to the extent of delegating a specially trained nurse to inaugurate the work in cities whose local medical societies have taken action requesting such aid, is something that seems well worth recording here, for the encouragement of other enthusiasts who are just optimistic enough to hope that the time may come when artificial feeding will be relegated to the limbo of historical monstrosities. In case some other state may be interested in taking the matter up, it may be worth while running over very sketchily the history of the movement so far, in the particular state mentioned.

It is no fanciful exaggeration of statement to say that, in order for any health measure to succeed swiftly and surely, it must have back of it the support of the medical profession. In order to make this carry conviction, one need only mention any one of some dozen or more perfectly meritorious schemes for the improvement of the public health, whose sponsors failed to take this principle into consideration, before attempting to launch their particular craft. Head winds and stormy seas have been the lot of every such attempt; and the wise health leader has learned to make haste slowly enough to take with him the best and most informed of the medical minds in his community, if he hopes for a fair voyage for

his project. In the case of breast-feeding propaganda in the state under discussion, it was realized that medical support was essential; and yet it was also readily seen that some sort of an object lesson was needed, if the idea was to be "sold" readily and on a large scale to the medical profession of the state. Accordingly, one county was chosen as the field for the demonstration; and an attempt made to put before every medical and nursing organization (county first but local as well) the technique of the demonstration, which has been discussed in previous issues of this journal, and so need not be repeated here. In other words, although the medical profession was informed fully as to what was going on, and their cooperation most eagerly sought, no formal action was expected of them, and the demonstration went forward as a bit of work put on by the state department of health. This proceeded for considerably more than the year that was originally chosen as the time limit for the work.

Toward the end of the demonstration, but before definite figures had been made available for comparison with the pioneer piece of work done by Sedgwick in Minneapolis, it began to be noticed in other parts of the state that a most interesting bit of health work was going on. Requests began to come in to the department for speakers to tell how similar work could be undertaken in other localities. Interesting to relate, these requests came from medical societies,—county or local; so that, while inaugurated as a definite departmental piece of work, the advance stage has now been reached in which the local medical profession itself is taking action.

What has been done in such cases is this. A speaker thoroughly conversant with the situation, and enthusiastic about the possibilities of the work, is sent as the "scientific part of the program" of a regular meeting of the medical society from which the request has come. If it can possibly be arranged, two or three nursing mothers,—preferably some whose milk supply is suppos-

edly failing,—are provided as clinical material. The nurses of the community are invited to be present; as it is realized that much of the actual load of the work will have to be carried by them. The program usually considers briefly the history of artificial feeding, the recent history of breast feeding in the state, and a hasty resume of the methods which have made breast feeding nearly universal in the communities where this technique has already been applied. The demonstration of the usual, abundant supply of milk in the breasts of the mothers who have been brought to show as clinical material,—especially striking after they have told their customary stories of their failing breast secretion!—carries conviction with it. The one touch needed to completely "sell" the thing has been found to consist in making several of the men and nurses present come forward and themselves get the knack, almost instantaneously acquired, of expressing the milk, not in drops, but in streams, as can almost always be done. Another very helpful feature in this work has been the presence in the audience of men from a neighborig locality, where the work is already in progress. A recital of the history of the demonstration in such a community, more or less similar in character to the local community, is of the greatest value in keeping the whole thing "down on the ground," and making the men realize that what is being done in a neighboring county can be done in their own quite as well. The more or less inevitable windup of such a meeting has been a motion from the floor committing the society to the inauguration of a campaign for the universalizing of breast feeding, such as has been described; and asking the state department of health to detail a specially trained nurse to teach the nurses in the community to carry on the work, under the direction of the physicians.

It is only necessary to say that the success of such campaigns seems pretty definitely assured. It has been found that at first there will be a few patients who do not seem successful in keeping their babies on the breast; but it soon

transpires, on a cursory inspection of the records, that these come largely from among the practices of two or three men who have been slow to realize the potentialities of the movement, and whose patients have naturally been likewise a little dubious as to what it was all about. These men usually swing into line with great interest and earnestness, as soon as they see, from the experiences of the rest of the profession, how simple a matter it is to keep practically all the babies of the community on the breast. Further than this, there is quickly brought into being a sentiment on the part of the mothers themselves, that is perhaps the most valuable asset that could be obtained, in bringing about the universalization of natural feeding.

To anyone who has watched the come and go of health measures sponsored by outside agencies, there is something inevitable about the way in which the go follows the come! Where the initiative comes from the local profession, however, and is, under them, carried forward by the nurses living in the community, it seems fair to assume (though it is of course far too soon to say for certain) that the community sense will be aroused to such a degree and in such a way that this health measure will become part of the community health sense, and as such will be permanent. Further, it seems fairly safe to assume that a community which has once tasted the satisfaction of having the lowered death rate and morbidity rate that such a program admittedly entails, will hardly be tempted to lapse back into the old, difficult, unsatisfactory ways of artificially feeding its babies. One awaits with interest the comparative studies that are being made, tracing the early years of these breast-fed babies as compared with those of the communities who, for some reason, such as non-cooperation on the part of mothers or physicians, failed to be numbered among those breast-fed. Comparisons, wherever made, have always been so much in favor of the naturally as compared with the unnaturally fed, however, that it is hardly fair to expect anything more

than conformation of data previously obtained.

Laboratories

HARVEY P. BARRET, M.D., *Editor*
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Laboratory Aids in the Diagnosis of Typhoid Fever

Laboratory methods used in the diagnosis of typhoid fever may be classed as specific and confirmatory. There is only one specific test for typhoid and that is a positive blood culture. The confirmatory tests, or those of particular value, are examinations of the blood, urine and feces. These tests will be taken up in detail.

A blood culture to be of value should be made during the first week of the fever, preferably during the first five days of fever. Blood cultures are of little value after the first week except in case of a relapse. The technique of blood culture in typhoid is comparatively simple. The vein is punctured with the usual aseptic precautions and five to ten c.c. of blood are withdrawn and placed immediately in some suitable culture medium. Undiluted ox bile with the addition of ten per cent of peptone and one per cent of lactose is probably the best medium to use. The culture is then incubated for twelve to twenty-four hours at 37 C. A subculture is then made on agar. After ten to twelve hours incubation the agar is examined. If a gram-negative motile bacillus is present it may then be quickly agglutinated with positive typhoid-agglutinating serum. The presence of a gram negative motile bacillus agglutinated by typhoid serum is sufficient evidence of the presence of *B. typhosus* in the blood stream. If taken during the first five days of fever a positive blood culture may be obtained, by this method, in as high as ninety per cent of cases of typhoid fever. This is the best, and the only specific, laboratory test for typhoid fever.

Of the confirmatory tests the following may be mentioned as being of value.

1. The total and differential leucocyte count.

2. The Widal reaction.
3. A positive urine culture.
4. A positive diazo reaction.
5. A positive feces culture.

1. One of the most valuable aids in the diagnosis of typhoid fever is the leucocyte count. In uncomplicated cases it is almost invariably low and continues so throughout the course of the disease. Counts of from three to five thousand are the rule. As in other conditions, one should not depend on a single count, but counts should be made daily and, for purposes of comparison, they should be made at the same time each day. The differential leucocyte count shows a diminution in the number of the polymorphonuclear neutrophils and an actual increase in the lymphocytes. There is usually a decrease and often a total absence of the eosinophiles, though this is not a constant finding.

2. In these days of almost universal anti-typhoid vaccination the Widal reaction is of little value except when it is negative. There seems to be a considerable amount of misunderstanding among physicians as to when the Widal reaction should be positive. It is a common occurrence to get a request to do a blood culture and a Widal on a patient at the same time, when the disease has been going on too long a time for the culture to be positive and too short a time for the Widal to be positive. Some text books say that the Widal should be positive in ten days. In our experience it has not turned out that way. The Widal is never positive under two weeks and more often it is only after three weeks of fever that a positive Widal may be obtained.

3. A positive culture for *B. typhosus* from the urine is usually possible during some stage of the disease, but this is not a constant finding.

4. Ehrlich's diazo test in the urine was formerly considered of value, but it has been shown to be present in tuberculosis and other conditions.

5. A positive culture for *B. typhosus* from the feces during the course of the disease may be considered diagnostic of

typhoid fever, but the possibility of the patient being a typhoid carrier must be borne in mind.

Urology

A. J. CROWELL, M.D., *Editor*
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Venereal Disease Report

An increase in the number of cases of venereal disease reported in the United States in the year which ended June 30, 1924, over the number reported in the previous corresponding year is disclosed by the figures recently made public in the annual report of the Division of Venereal Diseases of the United States Public Health Service. The report indicates that the increase in the fiscal year 1924 amounts to 27,382 cases, or 7.2 per cent. A total of 363,063 cases of venereal disease were reported to the various state boards of health from all sources. This total was composed of 193,844 cases of syphilis, 160,790 of gonorrhea, and 8,429 cases of chancroid.

"The fact that the 1924 statistics show an increase over those for 1923 does not necessarily mean that venereal disease was any more prevalent in the United States last year than in the year before," explains the Chief of the Division of Venereal Diseases.

"The greater number of cases now on record at the State boards of health," he continues, "may well be accounted for by the increased efficiency in detecting these maladies and by more conscientious reporting of cases on the part of private physicians. For a long time the danger from syphilis and gonorrhea was greatly enhanced by the fact that these diseases were carefully covered and concealed and were often kept secret even from physicians who might have brought about a cure. Fortunately people are now learning that they must go to a reputable physician or clinic if they wish to be cured, and laws requiring that these cases be reported to the State boards of health are making it possible to obtain some idea as to the prevalence of syphilis and gonorrhea in the country, although there are many

cases that still escape discovery."

During the fiscal year just passed, 504 public clinics reported to the State boards. These clinics treated 118,023 new cases of venereal disease made up of 65,046 cases of syphilis, 49,029 cases of gonorrhea, and 3,949 cases of chancre. A total of 2,147,087 treatments were given. The fact that these clinics made 302,152 Wassermann tests for detecting syphilis and 203,008 examinations to discover gonorrhea would seem to indicate that people are beginning to realize the terrible consequences that follow in the wake of these diseases and are willing to take advantage of reputable opportunities for cure.

Reports from 37 correctional and penal institutions were received by the Division. The efforts of those in charge of these institutions have resulted in a large increase in the number of venereally diseased persons discovered and treated. New patients to the number of 7,045 were admitted to treatment in 1924, an increase of 44 per cent over the year 1923.

The menace of venereal disease is one that is being fought by the United States Public Health Service and the various State boards of health acting in cooperation with municipal health officers. These governmental agencies are trying to impress upon parents, teachers young people and others the need of wholesome sex education, of prompt medical attention and the necessity for the passage of modern health ordinances and legislation. Among the social institutions which can aid in the fulfillment of this program are the home, the school, the church and the press.

Eye, Ear, Nose and Throat

C. N. PEELER, M.D., *Editor*
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Lung Abscess After Tonsillectomy

Lung abscess following tonsillectomy has been studied a great deal in the last few years. This has been brought about on account of the increasing number of abscesses recognized. The cause of the abscess is thought to be aspirated tonsil or adenoid tissue, or crypt content,

or some infective blood and mucus from field of operation. Some observers think occasionally a septic embolus may become dislodged from a thrombosed vessel in the operative area and finally settle in the lung and cause the suppuration.

Surgeons generally in speaking of prevention of lung abscess following tonsillectomy have put special emphasis on the position of the patient under anesthesia, the use of suction, hemorrhage, and other factors incident to the operation. Myerson in February number Archives of Otolaryngology says: "It is not the aspiration of tonsillectomy mixture that is important in the production of lung abscess following tonsillectomy, but the failure of a given portion of the lung to expel the content that is aspirated." In a bronchoscopic study of two hundred cases of tonsillectomy under general anesthesia Myerson found more than three-fourths of them showed the presence of blood in the tracheo-bronchial tree. He concludes from his study that normal lung tissue expels the aspirated material, and that only the lung tissue and smaller bronchioles damaged by prolonged anesthesia, or diseased by tuberculosis, influenza or pneumonia becoming the site of lung suppuration.

All patients for tonsillectomy, whether under local or general anesthesia, should have a careful physical examination and special attention to the chest. Under general anesthesia, with the patient's head lowered, the assistant should at all times, by means of the suction tube kept in the hypopharynx throughout the operation, prevent any material passing down the throat. In fact all precautions should be observed in every case.

The great majority of lung abscesses following tonsillectomy occur in the lower lobes of the lungs, and can be successfully treated by bronchoscopy. In the case here reported the location is one more difficult to drain by the bronchoscope. Formerly it was thought the patient who was afflicted with lung abscess was doomed to a life of suffering;

now the x-ray for early diagnosis and the bronchoscope for treatment in most cases have produced a great advance for the alleviation of this type of human affliction.

R. R. M., 9-24-24, age 30, white. Complaint: Depleted health. Rise in temperature. Spitting up some foul smelling sputum. Her doctor says she has abscess of the right lung.

History: F. H. Negative. P. H. Patient's health had not been very good for some time before having tonsillectomy.

P. I. August 10th patient had tonsillectomy under general anesthesia. At the same time a curettage and dilatation were performed. Patient returned to work on the 18th and continued working for ten days. During the latter part of this time she developed cold and was compelled to give up her work on account of weakness and temperature. Diagnosis of pneumonia of right lung was made. Ran temperature of 102 to 103 one week. Following this she had very little temperature for some five or six days. Has now been confined to her bed for the past nine days and has been unable to retain food for the last four days.

Ex:—Throat: Throat is entirely healed. There is considerable scar tissue on both sides. Nose: Mucous membrane pale. No enlargement of turbinates. Sinuses: All transilluminate.

General: The patient looks very sick. Temperature 104, pulse 120, respiration 30. Small amount of expectoration of foul odor. There is a dull area over upper front part of chest located between the clavicle and upper border of third rib on the right.

X-Ray: Picture shows an area on upper lobe of right lung corresponding to physical signs. Blood: White count 28,600. Urine: Trace of albumin, a few R. B. C. found, otherwise negative. Sputum: Streptococci predominate, many diphtheroid bacilli, no tubercle bacilli found.

Diagnosis: Abscess of right lung upper lobe.

Operation: August 25th bronchoscopy was performed under local anesthesia. Mucous membranes of the larynx, trachea and bronchi were greatly inflamed. The suction tube was passed into the upper lobe bronchus. Was unable to break into the cavity of the abscess, and only small quantity of very foul pus obtained.

9-2-24: A second bronchoscopy was performed with no better result than first.

9-9-24: Patient was referred to a general surgeon who performed a two stage operation under local anesthesia and drained large abscess located in the anterior portion of the upper lobe of the right lung. Recovery was slow but uneventful.

Dentistry

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"Dead Teeth"

The Joint meeting of the Mecklenburg Medical Society and the Charlotte Dental Society was a success. The work of Dr. Guy R. Harrison, the principal speaker is known to his friends, therefore what he has to say is to them authoritative.

Criticism of the meeting can be summed up by quoting the remarks of a lady who said that "you cannot get a true expression of opinion from a woman at a meeting, but from the door of the hall to the sidewalk she has a very definite opinion and expresses it."

By lack of discussion the meeting failed to bring out certain questions of great interest. "From the door to the sidewalk," "What is a dead tooth"? was asked and discussed vigorously. Why not in the meeting? It is jointly a most vital question before the two professions.

To quote from the Milford News, Feb., 1925:

Dr. T. W. Brophy's statement that the expression "dead teeth" has caused more harm and has led to a greater loss of teeth than anything else that has come up in the past twenty years. When a physician hears about an organism being dead he at once wishes to eliminate it. If he is told,—and he does not know the contrary because the medical colleges do not teach him,—that a tooth is dead, he immediately wants it extracted. It is well known that a tooth having a normal pericementum has necessarily living cementum. Such a tooth is still in vital relation with the surrounding parts and is not dead. Dr. Brophy has said, further, that the expression "dead teeth" should be eliminated from dental nomenclature, except in relation to a tooth that is undoubtedly necrotic. And he has also said, "It is the duty of a dentist to cure diseases and preserve and conserve and not destroy. And if he can conserve the teeth and cure the disease with which they are

affected, he should not remove them. It has been a calamity in America, an epidemic of tooth extraction."

Dr. J. W. Beach on the same occasion supported Dr. Brophy and asked his medical friends to say what a dead tooth is and what a pulpless tooth is, "Almost to a man," said Dr. Beach "they were unable to differentiate. A pulpless tooth is always an entire mystery to most physicians, perhaps because the dental profession has not taken steps to educate the physician with regard to the histology, pathology and physiology of a normal tooth. If a dentist told a physician

that a dead tooth is a necrosed tooth and that nature would not permit the presence of necrotic tissues, the physician would begin to open his eyes and would be grateful to the dentist for the information."

Joint meetings between physicians and dentists are being held all over the country. The result will be the broadening of a most highly specialized profession and at the same time by better understanding place at the service of the medical profession one of its most important branches.

Essentials of a Common Disease

Dysmenorrhea

OREN MOORE, M.D., F.A.C.S., *Charlotte*

Painful menstruation is a condition which is becoming more and more frequent, and for this reason, if for no other, it seems wise to occasionally review our knowledge of the subject and thereby discover if we are giving these cases the attention they deserve from the standpoint of diagnosis and intelligent treatment, or if we are simply calling them by the inclusive name of "dysmenorrhea" and giving viburnum and morphia.

There are two things the practitioner needs to know about painful periods, viz: what is the cause, and what is the cure. To understand the answer in both instances, it seems to me that we may better discard all the old cumbersome, overlapping and at times inadequate classifications which many writers of gynecological text books have attempted, and regard the pain as a symptom just as we regard it as a symptom when found in other conditions. In other words, it seems as reasonable to think of the pain of appendicitis as the real pathology as to regard the pain of menstruation as the actual disease.

The normal woman menstruates without pain, therefore if we find an exception to this rule, it is wise to set about seeking the cause for the abnormality

and in this search we are materially aided by a number of collateral findings such as; the time and type of pain, age of patient, child-bearing experience, economic status, presence or absence of temperature, tenderness or tumor mass.

The time and type of pain is of decided value in reaching a diagnosis; for instance, pain which appears before the flow and is relieved by the flow usually means obstruction to the flow, such as, acute ante flexion, elongated cervix, or stenosis of the canal; pain which grows worse as the flow progresses and is located largely in the lower back, is usually retrodisplacement in origin, while pain which is intense throughout the lower abdomen and accompanied by fever is generally due to pelvic infection, such as, salpingitis, etc., and pain which is sickening and nauseating generally comes from ovarian displacements and torsion.

Age of patient gives a valuable lead, as the vast majority of young unmarried women suffer pain because of ante flexions and faulty developments of the generative tract which offer resistance to the free escape of blood; while women of the childbearing class have a wider range of etiological factors among which are found: infections, displacements, tumors and birth injuries, and while gestation may and often does cure the developmental dysmenorrheas, it only adds

severity to the majority of acquired types.

The economic status of the patient often accounts for her pain, as working girls are notoriously predominant in menstrual dysfunction, due to the occupational position they assume and the physical and nervous strain of bread winning.

Infections of the adnexa and new growths in the pelvis will obviously give more pain during the monthly event, due to the increase in blood supply, than during the resting period, and this also applies to painful conditions outside of the generative tract, such as, kidney, ureteral and bladder stones, kinks and infections. In this connection, it must not be forgotten that pregnancy itself sometimes accounts for painful menstruation, and ectopic gestations almost regularly present at least one painful period before rupturing.

Endocrine dysfunction is occasionally the causative agent in producing pain and should be suspected when the patient shows an accompanying headache with a scanty flow and increasing body weight.

It will be seen that history taking is of decided importance in diagnosing the cause of painful periods, as it is in all other diseases, and is only surpassed in importance by routine bimanual examination. It would seem to me to be utterly folly to expect to reach a true concept of the cause of the pain without examining the patient, for while types and times of pains, classes and social status of the patient, childbearing and sterility are all valuable evidences, it so often happens that the patient herself is uninstructed in descriptive terms, ignorant of diagnostic values, and embarrassed by the situation, that her history is inaccurate and incomplete, and further, the several types of symptoms are frequently overlapping with consequent blurring of the picture and a clear conception is rendered possible by the physical findings alone.

If, as frequently happens, there is little present in the way of serious pathology and the case is one of functional or congestive nature, or if indeed there

is a true obstructive cause and for other reasons surgery is inadvisable, then, of course, temporary measures for immediate relief are demanded. In most instances of the above types, once the flow is established, pain quickly lessens which is a fortunate fact in that prolonged medication is thereby rendered unnecessary. The various virburnum preparations, official and proprietary, are well known and need no endorsement, as they are the first thought with most of us; however, it is worth while to observe in this connection that preparations of virburnum opulus are usually more effectual than others and further that the dosage employed by most practitioners is far too small both in size and in length of time. It is our practice to prescribe large quantities such as a pint or more at a time and instruct the patient to take two drachms four times daily for a period of from three to six months and occasionally longer, sometimes for as much as eighteen months. It must be confessed that this method was hit upon after we had observed that an occasional case of painful menstruation which we had failed to benefit had later achieved a cure through some of the advertised patent remedies, but only after a couple or three dozen bottles had been used which led us to the conclusion that in these instances we had discontinued treatment too early and that there is real virtue in most of this type of drug, if one is sufficiently persistent. During the painful seizure this dosage is increased to two drachms in hot water every hour until relieved.

The high hopes which were raised by the development of the synthetic antispasmodic benzyl benzoate have not been fully justified by practical use; nevertheless, it frequently proves serviceable during the agony of the attack and is a useful adjunct to bromides, chloral and other sedatives, and has the minor value of being harmless in reasonable dosage.

If the pain is regularly severe enough to require morphia, it seems wisest to use hyoscine in connection with the opi-

ate, as smaller dosage of the latter is then required. Lately, many reports of the use of a twenty per cent solution of magnesium-sulphate as a solvent for the morphia, 1 to 11 c.c. of the solution being used hypodermically, seem to indicate that there is marked lessening of the spasms and decided prolongation of the narcotic action and that this is the preferable method. Pharmaceutical houses are supplying epsom salts in refined form for this use.

Corpus luteum given by hypodermic every second day for three doses immediately preceding the expected period will materially benefit the scant and painful flow of the ovarian dysfunction case and will sometimes effect a complete cure.

Too often grave results may accrue by a failure to examine, as in tubal pregnancy, twisted ovarian cyst, or recurrent appendicitis, too frequently drug addiction is threatened by a too liberal dosage of morphia every month, and too frequently the patient herself acquires a morbidity of mind, because the real cause of her trouble is not discovered and explained even though not cured.

It follows in logical sequence that if diagnosis is made of the cause, then methods of cure will at once suggest themselves in the majority of cases. As stated above, the acute antelexions, the elongated cervixes, and the stenosed canals will in many cases be permanently cured by childbearing, and as they are not often the cause of sterility, one may reasonably hope for such an outcome, if the patient expects to marry soon. On the other hand, little can be gained by the ubiquitous dilatation and curettage, and very little more by the plugs and stem pessaries which are widely advocated, as in the first procedure dilatation and straightening of the canal endures for but a short period and the old deformity quickly reoccurs, and in the second, all too frequent cervicitis caused by the trauma of an illfitted plug is added to the patient's other discomforts, and in many instances a sure sterility established by the chronic cervicitis.

If marriage is remote, or if pain is so

severe that relief is demanded at once, some of the operations for amputating the cervix or straightening the canal, such as, Pozzi or the Strumpdorf or even the plastic type used by Goff are preferable, and if properly done will furnish relief.

In the class of cases where there is massive pathology, such as, tubal infection, tumors and stones, and in the so-called chronic appendicitis type, surgery offers the only hope of cure and should be undertaken before delay has fixed a drug craving or dilated the plexial vessels to the point of varicosity.

The retrodisplacement types are often easily handled by pessaries, positions, and exercises, and surgery is not indicated for dysmenorrhea alone.

Ureteral inflammation and kink are relieved by catheterization and dilatation, and pyelitis and cystitis by appropriate treatment, while endocrine dysfunction is benefitted by ovarian and pituitary therapy, and occupational dysmenorrhea is a problem for the social service worker, as well as the physician, and the two must consult and co-operate, if results are to be achieved.

In reviewing this study of painful periods—cause and cure—it is at once apparent that we refer to the case whose pain is real and severe, and not to the occasional functional discomfort which besets many women; the causes for the latter are legion and often trivial, such as, over exertion, petting parties, body chilling, excitement, and other emotions, change of environment and routine of living (College girls frequently exhibit temporary dysmenorrhea at beginning of each term), and are often discovered as accompaniments to systemic disease, such as, tuberculosis, pellagra, etc.

It is further obvious that if we regard pain as only one symptom, then we will more resolutely undertake to discover others which will unearth the cause. When this is done, common sense and common medical knowledge will suggest the rational treatment for cure.

News Items

Report of the National Board of Medical Examiners

Dr. J. S. Rodman, Secretary of the National Board of Medical Examiners, announces that three additional states, Michigan, Oklahoma, and Wyoming, have notified the Board that henceforth they will accept its certificate as qualifying physicians to practice medicine in those states.

This makes a total of 31 states which now recognize the Board's certificate granted to candidates passing its uniform qualifying examination, in addition to the territory of Porto Rico, the Military Reservation of the Canal Zone, and England and Scotland. The states are as follows: Alabama, Arizona, Colorado, Delaware, Georgia, Idaho, Illinois, Iowa, Kentucky, Maine, Massachusetts, Maryland, Michigan, Minnesota, Mississippi, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington and Wyoming. In 10 other states favorable legislation is now pending and it is expected that eventually the certificate granted by the Board will be good in all parts of the country.

The next written examinations of the Board will be held February 18-20 in 26 Class A medical schools throughout the country. The largest groups of candidates will be examined at Harvard, Cornell, University of Pennsylvania, Johns Hopkins, University of Chicago, and University of California.

The Board's work in conducting on a national basis. A standard qualifying examination for entrance into the practice of medicine is receiving increasing recognition from the State Boards of Medical Examiners, from medical colleges, health workers, and the general public.

Doctor Rodman also announced today the results of the Board's latest examination of candidates. In Part I, which covers the first two years of medicine, George K. Speare of Lowell, Massachu-

setts, a fourth year student of Harvard University Medical School, earned the highest number of credits of the 180 candidates, getting 395.8 out of a possible 425. **Houston S. Everett of Rockingham, North Carolina**, a fourth year student at Johns Hopkins University Medical Department, stood second with 393.6 credits. Other candidates among the 10 highest were: Mark F. Lesses of Salem, Massachusetts, Harvard Medical School, 393.5; Miss Marie F. Gregory of New York City, Cornell University Medical College, 393.1; Theodore Reichbaum of Easton, Pennsylvania, Harvard University Medical School, 392.1; Robert H. McDonald of Lakeside, Ontario, Canada, University of Toronto Faculty of Medicine, 388.0; J. Lionel Alloway of Columbus, Ohio, Johns Hopkins University Medical Department, 385.6.

In the Part II examination, which covers the third and fourth years' work in medicine, a woman took premier honors in the group of 60 candidates—Dr. Louise de Schweinitz of Bethlehem, Pennsylvania, who prepared at Johns Hopkins University; she earned 206.4 out of a possible 225 credits. Dr. D. M. Bosworth of University of Vermont College of Medicine stood second at 199.3. Other candidates among the 10 highest won the following rates: Dr. Samuel B. Hadden of Dunmore, Pennsylvania, University of Pennsylvania School of Medicine, 198.7; Dr. E. R. Bailey of Chicago, Illinois, Rush Medical College, 198.3; Dr. Wilma R. Cohn of University of Colorado School of Medicine, 196.3; Dr. W. O. Thompson of Halifax, Nova Scotia, Harvard University Medical School, 195.9.

Surgeon-General M. W. Ireland is President of the National Board, and Everett S. Elwood of Philadelphia is Managing Director.

The "Crescent Limited"

Announcement is made by Mr. W. H. Taylor, Passenger Traffic Manager, Southern Railway System, that beginning on April 26th, a new de luxe extra

fare train, the "Crescent Limited" will be established between New Orleans, Mobile, Montgomery, Atlanta and New York. Negotiations between officials of the Pennsylvania Railroad, Southern Railway, West Point Route and Louisville and Nashville Railroad have now been concluded and definite arrangements worked out.

The train will be operated over the Pennsylvania R. R. between New York and Washington, Southern Railway between Washington and Atlanta, West Point Route between Atlanta and Montgomery, and L. & N. R. R. between Montgomery, Mobile and New Orleans.

This is an old established route and for the most part is a double tracked line. The new train will have all the modern conveniences for the comfort of not only the men travelers but also for the ladies and children.

The service and equipment on this new "Crescent Limited" will be comparable to the "Broadway Limited" on the Pennsylvania Railroad between New York and Chicago.

The establishment of this service is an evidence of the development of the South and the purpose of the principal railroads in the South to keep a pace with the progress of the country served.

The new train will leave New Orleans at ten o'clock at night, pass Atlanta at

1:45 p. m. Eastern Time, arrive Washington 6:15 a. m., New York at 11:45 a. m.

On the Southbound trip the train will leave New York at 6:40 in the evening, pass Washington at midnight, arrive Atlanta the next afternoon at 5:50 Mobile about 5:00 a. m. and New Orleans 9:15 a. m.

This is the quickest and most convenient schedule ever established between New Orleans, Atlanta and New York.

The train will be equipped with observation sleeping cars and modern Pullman equipment of sections and state rooms. The club car will be provided with a valet, and the dining car service on this train will be extra fine.

The schedules are so arranged that the business man can leave New Orleans after dinner, Atlanta after the morning office hour, and be in New York the next forenoon in time for business, also leave New York after the business day and reach New Orleans in time for business the second morning with only the loss of one business day enroute.

By the establishment of this service the traveler between New Orleans, Mobile, Montgomery, Atlanta, Greenville, Spartanburg and Charlotte will have the advantages of a service to New York comparable to that furnished between Chicago and New York.

A Timely Communication

Editor "Southern Medicine & Surgery,"
Charlotte, N. C.

My Dear Doctor Northington:

We have just passed through the period of the largest enrollment of our young men in any part of our history: we have just witnessed the distressing and disgraceful scene of the deliberate sinking of around two hundred millions of dollars of value in modern battleships, finished and incomplete, of our nation going quietly to sleep with insufficient appropriations for maintaining an army of even very

moderately respectable numbers, and our national congress doling out with parsimonious hand, an inadequate sum to properly provide for the Citizens' Military Training Camps which, thanks to General Pershing's powerful influence with the people, just at the end of the war, was legislated for.

These fine young fellows who are being appealed to, to attend the C. M. T. C. are in need of certain preliminary examinations, of anti-typhoid inoculations, of small-pox vaccinations,—all before the U. S. is willing to regard them as fitted to receive this training in phy-

sical and military development. Apparently it seems most unfortunate that funds are not available to pay the medical men of the state and nation proper fees for this service; but there is not; and the lads entering on training besides giving their time without recompense, must pay for it themselves, unless the doctors over the state will contribute this service for the common good.

An observant individual musing on the course of history, or an army man, or reservist, who has enjoyed the reading of that most excellent "History of the U. S. Army" recently from the pen of Maj. Wm. A. Ganoe, cannot fail to be most profoundly impressed with the fact that the United States, after every serious armed conflict, as rapidly as is possible, proceeds deliberately to hasten the abandonment of all armies and other suggestions of preparedness for either giving battle or resisting the armed encroachments of others. Following the seven long years of the Revolution during which we had developed a fair degree of military competency, our state of national defense was suffered to lapse into the condition where England found us in the war of 1812, wholly unfitted for conflict; and during that period we suffered the ignominy of seeing our capitol occupied by an enemy thousands of miles from home and supplies, while we endured the national disgrace of seeing the war ended, not by any special achievement of American land forces in repelling the invading armies, but rather through the supremacy over the earth, for the time being, of the masterful Napoleon who gave Great Britain all she could well care for without bothering us longer.

The war with Mexico developed again the interesting fact of our national unpreparedness for war with even a second class power; and the complete successes of the Confederate Armies during the earlier period of our civil war evidenced the superior military fitness and experience of Lee, Davis, and others who were trained soldiers, but even their genius and experience of a score of years before in battles, were not of more than passing avail owing in part

to the general lack of military training in the South at the beginning of the war.

The war with Spain, to those who have carefully studied the intimate details of preparation, procedure, battle, holds little to record with any degree of pride that in any way suggests a strong nation willing to spend money in time of peace to save the brave men who were wantonly sacrificed to the greed of saving money from army expenditures when no war was on the immediate horizon.

In 1917 and again in 1918 I was ordered by the C.O. to solicit subscriptions for the Liberty Bond Sale in the Base Hospital. In giving me the order in a personal interview he remarked, "I think it's a ——— shame to ask these men to buy bonds." I fully agreed with the Col., but I made a systematic canvass of every officer, enlisted man, and patient in the base, usually beginning my little spiel in each ward by detailing the interview with Col. Sheep—The result? Well, when the Fourth Liberty's were on sale, I canvassed (at night) the entire county, soliciting the general public, in company with our Col., the good Red Cross man, Rev. T. J. Mangum, and those Mecklenburgers are fine, fine folks, but they did not as unanimously buy the Liberty's as did the B. H. office, personnel, and patients, who almost without exception, sick men in their beds, and all, each bought a bond.

Now I am attempting to enlist the services of the North Carolina physicians, with very much the same feelings I had when (myself voicing the Colonel's feeling of "shame at asking the boys to buy bonds"), when I ask the medical men of this state to help get the young men ready for the C. M. T. Camps this summer. Alert, active, young officers of the regular contingent are advertising the C. M. T. C. for 1925 summer, visiting the high schools, getting the lads from 17 to 21 interested, but there are some necessary medical preliminaries to be had, and for which the federal authorities have made no provision, ere the boys are available to start for the camps.

Physical Examination,
Anti-Typhoid Inoculation and
Vaccination

are three pre-requisites for entry. Many of the young fellows who desire to attend these summer camps of the Army, cannot well afford to pay usual fees for these professional services, and they hesitate to ask for such help. I am sure that any physician in the state will, as a citizen, gladly make his small contribution of service to the nation and to the boys themselves in the great benefits to accrue to them in receiving the training, if his attention is merely called to the opportunity; and yet in asking the doctors, knowing the many, many, calls on their professional courtesy, I experience the same feeling I did, when I asked sick soldiers to buy Liberty Bonds to help save the National honor. I ask the physicians of our state, regardless of whether they were in the service during the Emergency or not, whether or not they hold commissions in the Medical O. R. C.—I do not care, just as your contribution to the lads who are to be benefited, will you not allow it to be known in your respective communities, through the press-service of your local county medical societies, or otherwise as you deem fit, that boys attending the C. M. T. C. can receive proper medical credentials by calling on the doctors.

Thanking you Dr. Northington for your kindly aid in bringing this subject to the attention of the members of our profession, and thanking them in advance for their gracious help, Sincerely,
J. HOWELL WAY.

Waynesville, N. C., March 9, 1925.

A Medical and Dental "Book of Merit"

A belief that the medical profession had not received adequate recognition for distinguished service in the World War as compared with other branches of the army and navy is not sustained in a careful study by Hume,⁶ who has catalogued the names of all officers of the Medical Department who received the medal of honor, distinguished service cross, distinguished service medal or

navy cross, together with the citation setting forth the service or deed for which the decoration was given. With this list is an interesting history of the decorations conferred by our government on members of the military services, illustrated with pictures of the medals. The United States was the first country in the world to establish a military decoration to be awarded for acts of bravery irrespective of rank. This decoration was instituted by General George Washington in an order dated August 7, 1782, issued from his headquarters at Newburgh on the Hudson. The decoration was known as the Purple Heart, or the Order of Military Merit, and the names of all persons receiving it were to be recorded in the Book of Merit, which was to be kept at headquarters. The order stated that "men who have merited this distinction (are) to be suffered to pass all guards and sentinels which officers are permitted to do. The road to glory in a patriot army and a free country is thus opened to all. This order is also to have retrospect to the earliest stages of the war, and to be considered as a permanent one." But not even the will of our first president could confer permanence in an unmilitary nation, and when, after two generations had passed away, Congress established the certificate of merit, Washington's order of military merit had disappeared in the dust of oblivion. This little book gives vivid glimpses of the responsibilities and dangers that war brings to military surgeons. One is given a thrill to read paragraphs like this:

Near Chaudron Farm, France, Oct. 1, 1918, when the sanitary detachment with which he was working was ordered to fall back under intense artillery and machine gun fire, Captain Bates, upon his own volition and contrary to the advice of others, refused to leave the wounded men who had not been evacuated, but remained with them throughout the day, ministering to them under the most violent fire, in utter disregard of his own safety. When night came he secured litter bearers and succeeded in taking all the wounded to safety.

Or this citation for a naval medical officer who received both the navy cross and the distinguished service cross while serving with marines:

In the Bois de Belleau, France, June 11, 1918, although he had been wounded under the left eye, almost blinded by gas fumes and his dressing station wrecked by shell fire, he (Lieutenant Commander Pratt) remained at his post, working under the most trying conditions until all the wounded had been safely evacuated.

It is interesting to learn that **dental surgeons** during battle forsook their operating chairs for the first aid stations at the front, where their mechanical skill made them very valuable in the application of splints and dressings, and so dental surgery has acquired a new dignity in military eyes from the list of its members killed and wounded in battle. No member of our profession can turn over the pages of the Medical Book of Merit without being proud of these records of the ability, courage and self-devotion of the medical men in uniform.—*Jour. A. M. A.*, Feb. 28, 1925.

6. Hume, E. E.: A Medical Book of Merit; United States Army and Navy Decorations Awarded to Medical Department Officers for Distinguished Service in the World War, Washington. D. C., 1925.

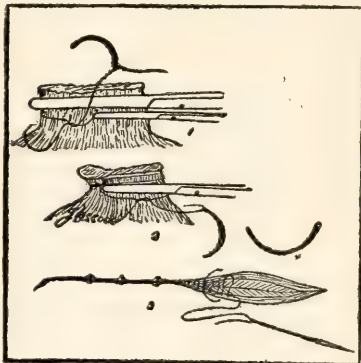
A Method of Ligating Pedicles, and Applying a Subcuticular Suture

HAROLD GLASCOCK, M.D., Raleigh

Nos. 1 and 2 show a method of ligating large

pedicles. Before ligating, a small clamp is put on the pedicle immediately under the large clamp, taking about half of the pedicle in its bite. A ligature is then passed through the pedicle with a dull-pointed needle, and half the pedicle is tied as the first forceps is removed. A second ligature is then passed through the pedicle including a small part of the tissues included in the first ligature, and tied as the smaller forceps is removed. The needle is an ordinary one dulled by grinding off its point. It permits passing through the tissues without penetrating the vessels, and can be used as a ligature carrier with a needle holder.

No. 3 represents a method of applying a subcuticular suture. The suture is brought out and over the wound at distances of one to one and one-half inches apart. Its advantage is that one is able to remove any section of the suture without disturbing the remaining portion. It is removed with a minimum of pain. Should a section of the incision become infected, any section can be removed without infecting the rest of the incision.



Miscellaneous

Arsphenamin Risks

Soma Weiss, New York (*Journal A. M. A.*, Feb. 21, 1925), publishes an analysis of accidents due to arsphenamin and records an attempt to approach one phase of the clinical problem with the help of animal experiments. The purpose of this study was to ascertain whether arsphenamin in massive therapeutic doses produces changes com-

parable to those of acute yellow atrophy of the liver in man and, if such changes are not produced, whether any predisposing condition could be induced experimentally which, together with arsphenamin, produces acute yellow atrophy of the liver in animals. The results of these experiments indicate that repeated doses of arsphenamin, corresponding to massive therapeutic doses, produce small areas of necrosis, fatty

infiltration, congestion with round cell infiltration, and occasionally cloudy swelling in the liver cells, with the evidence of fatty degeneration in the tubules of the kidneys in some cases. The poisons produced no changes in the spleen. This tissue injury was not increased or modified when arsphenamin was combined with mercuric salicylate, in amounts corresponding to therapeutic doses in man. When the doses of arsphenamin mentioned were administered to cats in which liver injury had been produced by chloroform, the liver regenerated at the same rate as that in the series of cats which received chloroform alone. Arsphenamin, therefore, does not appear to increase the injury produced by chloroform. The histologic changes and the behavior of the poisoned animals do not correspond to those observed in acute yellow atrophy of the liver in man. The classification of the toxic reactions cannot be applied rigidly. Cases showing symptoms and signs characterized by skin reaction (dermatitis exfoliativa), and those with vasomotor reaction (edema), are relatively frequent. Twenty-nine deaths, at least, are attributed to arsphenamin. In twenty-one cases of the twenty-nine, death followed the injection of arsphenamin within a few hours. The liver showed no pathologic changes in seventeen cases in which necropsy was held. It is important, however, to emphasize the fact that every case of the group showed severe chronic lesions in other organs. Acute yellow atrophy of the liver, so called, followed the administration of arsphenamin in eight cases, but no predisposing factor was found on pathologic examination which explains the etiology of the disease. In additional cases, death was attributed clinically to arsphenamin, but the necropsy revealed some other cause. Toxicologic analyses were recorded in seventeen fatal cases following the administration of arsphenamin. It is concluded, on the basis of the study presented, that the majority of fatal accidents can be prevented by observing caution in individuals who show cardiovascular and renal disease, clinical evidence of status lym-

phaticus, or acute infectious disease (pneumonia). The fact that animals under the experimental condition described do not show acute yellow atrophy similar to that in man, and that in the fatal acute accidents in which repeated doses of arsphenamin had been given the liver did not show noticeable pathologic changes, suggests that therapeutic doses of arsphenamin do not produce noteworthy tissue damages in the liver. One cannot attribute acute yellow atrophy of the liver to a toxic effect of arsphenamin. However, as the relationship between the administration of arsphenamin and acute yellow atrophy is definite, the conclusion that arsphenamin plays an indirect role in causing acute yellow atrophy is inevitable. One cannot say with certainty whether this role lies in the precipitation of the condition in the presence of predisposing causes or in the efficient bactericidal action of arsphenamin, whereby a toxin is liberated. The fact that the same disease occurs in syphilis without arsphenamin suggests rather the second possibility.

On Reducing Operative Risks for the Diabetic

In order to reduce the risk of operation for the diabetic patient as nearly as possible to the level of the surgical disease for which operation is done, Nellis B. Foster, New York (Journal A. M. A., Feb. 21, 1925), says three conditions must be effected: constant freedom from glucose in the urine; a maximal diurnal blood sugar of less than .2 per cent., and absence of acidosis. These conditions may be attained by diet adjustment alone; the use of insulin insures success and shortens the time period required. When the nature of the operation is such that the patient's diet must be limited or restricted to liquids after operation, it is better to use milk for the preliminary period; then no new adjustment is needed directly after operation. Besides, milk has definite advantages in itself; it is a balanced food in respect to fatty acid and glucose ratios, and, in contrast to the usual dia-

betic diet, it is an alkaline diet. There is no other food so easily measured and whose composition in carbohydrate, protein and fat may be so accurately estimated. And for the expeditious adjustment of diet, accuracy is the master key. The amount of milk in the diet naturally depends on the caloric needs of each patient. By using insulin along with a diet of known composition, it is usually possible, if one will take the trouble, to attain normal blood sugar and sugar-free urine in twelve hours. Ketonuria may persist for a day unless considerable glucose is given with calculated doses of inulin to metabolize it. When it is desired to reduce the blood sugar as rapidly as possible, it is necessary to examine the urine for sugar at two hour intervals and to estimate the required dose of insulin from this amount of sugar in the urine. In this rapid method there is always the possibility of producing hypoglycemia, but this is easily checked by injecting a small amount of glucose intravenously. The whole procedure should be carried out with the accuracy and care given to a surgical operation. Diabetes is one disease that may be handled with almost mathematical precision.

Menace of Poorly Fitted Spectacles in Old Persons

John J. Morton, New Haven, Conn. (Journal A. M. A., Feb. 28, 1925), stresses the fact that poorly fitting spectacles can be a real menace to their wearers. This is especially applicable in those beyond middle age, and the danger is considerably increased when senile changes have taken place in the skin of the irritated area. One should be mindful of this possibility and should take every precaution with the proper adjustment of eyeglasses. The places where constant abrasions are to be avoided are the bridge of the nose, the sides of the bridge near the inner canthi, the temples and at the back of the ears. In the four cases reported by Morton, the temples were affected in three instances, and the fourth lesion occurred behind the ear. Owing to the

tendency for basal cell cancer to occur most commonly on the nose, it is probable that most growths arising in irritation from spectacles will occupy this position. It would seem a priori that spectacles of the pince nez type would be especially liable to cause trouble, but no data are available to support this assumption. In view of the possibility of malignancy occurring in an irritated area, one should take the responsibility of impressing on patients the necessity of promptly attending to any maladjustment of their spectacles.

Improvement in Anesthetic Technic For Dental Surgery

Morris Ecker, New York (Journal A. M. A., Feb. 28, 1925), describes his technic as follows: The mask is placed over the face of the patient, who respires nitrous oxid (nine parts) and oxygen (one part) six or eight times; at the end of this period the patient is unconscious or nearly so. Ethylene is then very gradually turned on until four parts are given; the oxygen is increased and the nitrous oxid is decreased to two parts each. When this ratio is reached, i. e., ethylene, four parts; nitrous oxid and oxygen, each two parts; the patient is in light surgical anesthesia, which may be deepened if indicated by holding the mask in position for a short while longer. With the nasal inhaler, the proportions usually remain as stated. Nitrous oxid, having no odor, should be given until the functions of the olfactory nerve are abolished, which takes from twenty to thirty seconds, and the patient is then in a state of unconsciousness. When the ethylene is turned on, it is unnoticed by the patient. The oxygen is then slightly increased and the nitrous oxid decreased. From this point on the three gases are combined and the flow is continuous. Light surgical anesthesia takes place within from one and a half to two minutes. The proportion of the gases used is approximately two parts each of nitrous oxid and oxygen with four parts of ethylene. No valve manipulation is necessary. By comparison, if nitrous oxid

and oxygen were used alone the anesthesia would be not so smooth, and the patient would near the danger zone.

THE DIAGNOSIS OF INFECTIOUS DISEASES.

The attached questionnaire has been prepared for the guidance of the diagnosticians of the Department of Health, and is interesting to all physicians, especially the more recent graduates. It gives facts regarding the new serological diagnosis of and the immunization against scarlet fever:

SCARLET FEVER

Q. What is the source of infection?

A. Unknown.

Q. What may be said of the infective agent?

A. The belief at present is that the virus is contained in the secretions from the nose and throat, in the blood and in the lymph nodes, and that is given off in the discharges from the mouth, the nose, the ears, and from broken-down glands of infected persons.

Q. What is the mode of transmission?

A. Directly by personal contact with an infected person; indirectly by articles freshly soiled with discharges of an infected person, or through contaminated milk.

Q. What is the length of the incubation period?

A. Two to seven days, usually three or four days.

Q. During what time is the disease transmissible?

A. By fiat, in New York City, for 30 days from onset of symptoms, and until all abnormal discharges have stopped and open sores have healed.

Q. What are the cardinal symptoms of scarlet fever?

A. Fever, sore throat, rash—initial projectile vomiting is common in children.

Q. What is the course of the fever?

A. Sudden rise of 3 or 4 degrees at beginning of prodromal period; continues to rise with appearance of rash; usually reaches maximum (102 to 104 F. in favorable cases) on second or

third day of rash; returns to normal in uncomplicated and favorable cases by end of first week.

Q. What may be said of cases in which temperature continues to rise until end of first week.

A. They are unusually severe and of doubtful prognosis.

Q. Describe the enanthem?

A. The enanthem never misses fauces. In about one-third of the cases it affects the tongue. The pillars, the tonsils, and uvula, the soft palate and frequently the mucous membrane of the hard palate are inflamed. There is redness, more or less oedematous swelling, with or without exudate on tonsils with or without miliary vesicles on uvula, soft and hard palate. The throat is usually very painful—in distinction from the throat of German measles—it comes on with fever and persists with the rash.

Q. What may be said of the tongue?

A. The tongue may show no abnormality. It may indicate the presence of fever. It may be the so-called strawberry tongue.

Q. How do you describe a strawberry tongue?

A. The tongue at first is coated, gray or yellow, with red tip and edges. Later within the week it desquamates, presents an intensely red surface, with enlarged papillae. This tongue, typical, may be considered pathognomonic. It is present in less than one-third of all cases.

Q. Describe the rash of scarlet fever?

A. The rash of scarlet fever consists of an erythema plus a vesicular dermatitis. It appears first about 24 hours after onset of symptoms, on the upper chest, spreading downward over trunk and extremities. It presents many variations. The face may be red and congested, as in confluent measles; there may be morbiliform areas on trunk and extremities; the greater part of the skin surface may be free from rash; the vesicular element may be absent, or present over all; the vesicles may coalesce, lose their miliary character, and become as large as split peas; haemorrhages into the skin may be present, to a consider-

able extent, even in mild cases; the color of the rash varies with its intensity and with the hue of the patient's skin; in colored subjects, it may be difficult to make out any eruption.

Q. Do these irregularities present limitations?

A. Yes, circumoral pallor is present when the face is affected. Neither morbilli nor coalescent vesicles are found throughout the entire eruption. While the hue is variable, it is comparatively constant, not changing from a light red to a dark purple in less than twenty-four hours—like the rash of mercurial ointment poisoning. (Colored people are very keen in discerning changes in hue in the skin of their own race, due to eruptive fevers.)

Q. Do many unrelated conditions simulate scarlet fever?

A. Yes, any other one of the exanthemata, typhoid fever, or influenza, can produce a prodromal scarlatinal rash; many other infections, early or late; many drugs; many articles of food; the mere presence of high fever may produce a prodromal scarlatina. Abscesses, wounds, burns, recent curettage, childbirth, may all be followed by a scarlatinal eruption; sepsis can cause conditions of skin, of mucous membranes and of temperature, identical with those of scarlet fever.

Q. How may we differentiate these simulating conditions?

A. There can always be found some difference or some irregularity foreign to scarlet fever. The rash of scarlet fever never shows an urticarial element; never shows a distinct or circinate border; is not distinctly itchy. There is a proportion between pulse and temperature, that is distinctly scarlatinal. A patient at death's door, with an intense scarlatiniform eruption and with a practically normal throat, is not suffering from scarlet fever. Of all the means of differentiation, however, at our disposal, a study of the duration of the relationship between the symptoms of to-day and those of yesterday or of tomorrow, or the change for better or for worse taking place within twenty-

four hours—is by far the most important. All of the above mentioned conditions, in their simulation of scarlatina, lack persistency of symptoms in scarlatinal proportion. Sepsis gives the most perfect imitation, but it can't keep it up for twenty-four hours. With all irregular cases, with all conditions suggesting scarlatina, but not quite coming up to requirements, and with all cases under one year, it is advised to make a second visit, next day, to confirm diagnosis.

Q. Is simulation or dissimulation of symptoms a more frequent cause of errors in diagnosis?

A. Simulation; by far the commoner error is to make a diagnosis of scarlet fever when it is not present than to fail in recognizing it when it is present.

Q. What are departmental procedures in connection with scarlet fever?

A. Isolation of patient in home or hospital, maintained in each case until end of period of infectivity; concurrent disinfection; terminal disinfection.

Q. What is the Dick test?

A. A test similar to the Schick test for determining susceptibility to scarlet fever. A soluble toxic filtrate of a bouillon culture of the scarlatinal streptococcus is used, and 0.1 to 0.2 c.c. of a dilution of the toxin is injected intradermally on the forearm. A control test with heated toxin, or with toxin neutralized with convalescent serum, is injected in the other forearm. Positive, negative, pseudo and combined reactions are seen, similar to those noted with the Schick test. The positive Dick reaction appears more rapidly than the positive Schick reaction. In 18 to 24 hours, the positive Dick reaction is at its maximum. It fades much more rapidly than the positive Schick test; only the more strongly positive reactions showing a slight brownish pigmentation at the end of seven days.

Q. Is there a method for active immunization against scarlet fever, similar to that involving the use of toxin-antitoxin in diphtheria?

A. Yes, the same toxin used for the Dick test is also injected, in increasing

doses, for active immunization. The doses are based on the skin-test dose. Four injections are made, 7 days apart. The doses are 250, 500, 1,000 and 2,000 skin-test doses. Local and general reactions are noted, especially after the first dose. The constitutional reactions are seen in about 10 per cent of the injected persons. The symptoms appear in 6 to 12 hours after the injection, and consist of varying degrees of temperature elevation, nausea, slight sore throat, and a scarlatiniform rash. The symptoms disappear after 24 to 48 hours. The development of an antitoxin immunity is determined in about 4 weeks by giving another Dick test.

Q. Is there an antitoxin, similar to diphtheria antitoxin, for the prevention and cure of scarlet fever?

A. Yes, an antitoxin serum is obtained from horses which have been injected with increasing amounts of the scarlatinal toxin. The dose recommended, for purposes of passive immunization, is 10 c.c. and, for treatment, from 20 to 50 c.c. The injection of antitoxin for therapeutic purposes is best given intravenously. From muscle injection the absorption, and also the effects, are slower. The effect of antitoxic serum in the treatment of scarlet fever is best seen in the more severe toxic cases that have no septic complications, such as sloughing fauces and enlarged cervical glands. There is a rapid, almost critical, drop in the temperature, an improvement in the character of the pulse and respiration, and more rapid fading of the rash.

Q. What is the modern conception of the cause of scarlet fever?

A. Scarlet fever is a disease caused by a special type of the hemolytic streptococcus, called the scarlatinal streptococcus. We now consider the disease a local infection of the mucous membrane of the naso-pharynx in which a soluble toxin is produced. This is absorbed into the system of the patient, where it gives rise to the rash and other constitutional symptoms. The disease thus resembles to a certain extent diphtheria. It differs, however, from diphtheria in

that the toxin stimulates the production of an antitoxic immunity in nearly all patients and in the tendency of the hemolytic streptococcus to invade the body and produce gland, ear and joint infection. The immunity, therefore, to scarlet fever is chiefly *antitoxic* and not *antibacterial*, since patients who have recovered from scarlet fever, either recently or in previous years, may develop infections with the specific scarlatinal organism. These reinfections are not associated, however, with the characteristic clinical criteria of scarlet fever, a rash followed by desquamation. Similar infections without a rash may also occur in those who are "naturally" antitoxically immune to clinical scarlet fever and give a negative Dick reaction.

Q. Can the Dick test be used for the diagnosis of scarlet fever?

A. The Dick test is positive early in scarlet fever, and negative after the sixth to tenth day. The test is, therefore, of help in establishing the diagnosis by repeating the test and obtaining negative reactions during the later stages of scarlet fever. A strongly positive reaction, early in the disease, and again later in convalescence, speaks against the diagnosis of scarlet fever.

CHICKENPOX

Q. What is the source of infection?

A. The infectious agent is presumably present in the lesions of the skin and of the mucous membrane, the latter appearing early and rupturing as soon as they appear, render the disease communicable early, that is, before the exanthem is in evidence.

Q. What is the mode of transmission?

A. Directly from person to person; indirectly through articles freshly soiled by discharges from an infected individual. Transmission, by inoculation, if possible, is so rare as to be negligible in importance.

Q. What is the period of incubation?

A. Two to three weeks. Shorter periods are claimed, but experience shows the above limits to be practically without exceptions.

Q. When is the disease communicable?

A. From the appearance of the first mucous membrane lesions until all primary scabs have disappeared.

Q. Has varicella a prodromal period?

A. Usually absent in children. Usually present in adults; identical in symptoms with the prodromal period of smallpox (headache or backache, or both, with fever), but never longer than 48 hours.

Q. On what must the diagnosis be based?

A. On the exanthem. Enanthem (eruption upon mucous membrane), and fever, may or may not be present. In either case, they are wholly indeterminate.

Q. Describe the appearance of the exanthem.

A. First there are little red spots on the skin which rapidly show a clear exudate and become vesicles. Many of the vesicles rupture within a few hours. The unruptured lesions begin to shrink and dry up within a day or two from their first appearance.

Q. What may be said of the distribution and progress of the exanthem?

A. Distribution is general and centripetal rather than centrifugal. That is, lesions are closest set on the trunk, becoming further and further apart, distally, on extremities; present on hands and feet, possibly on palms and soles, but fewer in proportion to the number of lesions on trunk and face than in smallpox. The scalp is quite freely invaded in chickenpox. Mild variola sometimes misses the scalp. The profusion of chickenpox lesions on the scalp varies directly with the profusion of hair. The profusion of smallpox lesions varies inversely. Again chickenpox lesions, on a given small area of skin, appear on successive days, so that scabs, vesicles, and macules may be seen side by side; they attain full development in a day or two (some of them in a few hours); they usually begin to rupture, in large numbers, almost from the start, due to mere pressure of clothing or to any slight incidental violence, wetting the

skin when ruptured. They begin to desiccate, when unbroken, as soon as fully developed. The broken-down lesions frequently become infected, and a dark and somewhat depressed scab in the centre is a very common result. When the unruptured lesions begin to desiccate, as vesicles, the initial stage of this retrograde process may easily be mistaken for the progressive umbilication of variola. The two conditions, however, are not identical to the eye, and are readily distinguishable by the finger.

Q. Do cases of chickenpox sometimes present difficulties in diagnosis?

A. Yes, the lesions may be so numerous that the distribution is indeterminate—there being no vacant space for more lesions anywhere. The eruption is deep-seated and few or no lesions rupture. The majority of the lesions may go on to pustulation. These peculiarities are found more frequently in colored subjects, with whom, also the watery nature of the exudate is not so easily made out. Chickenpox in adults, may give a severe prodromal period, fever, headache and backache. The duration, however, is one to two days, not three to four, as in variola. In these difficult cases, the decision must be based on the preponderance of the evidence, for all of the above difficulties will scarcely be confronted in any one case. As a final test, it is safe to decide that any eruption, the majority of the lesions of which are still in the progressive stage (neither ruptured nor desicating) on the fifth day, is not the eruption of variocella.

Rarely chickenpox is hemorrhagic throughout and malignant, resulting in death.—Bulletin Dept. Health, New York City.

BOOK REVIEWS

OPERATIVE SURGERY By J. Shelton Horsley, M.D., F.A.C.S., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. With 666 Original Illustrations. Illustrated by Miss Helen Lorraine. Second Edition. St. Louis, the C. V. Mosby Company. 1924. Physiologic and pathologic principles so permeate this work that the mechanics do not

become tiresome. In planning operative procedure the likely physiologic result is considered and given precedence over the anatomic, although cosmetic effects are by no means lost sight of. Basic considerations on malignancy are featured. The important matter of surgical drainage is discussed fully and instructively. Many new operations are minutely described. Everywhere the discussion is centered on the "Why?", which adds greatly to its value as a practical guide and to its intellectual interest.

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON HEALTH PROBLEMS

—in Tropical America, held at Kingston, Jamaica, B.W.I., by Invitation of the Medical Department United Fruit Company. Published by United Fruit Company, Boston, Massachusetts, 1924.

The name United Fruit Company suggests to most of us bananas, ships and Central American revolutions. It is a bit startling to receive a thousand-page volume on health problems, endorsed by Harvard University "with the compliments of the United Fruit Company." At once we think of the great change which has come about in recent years in the attitude of great corporations toward the health of their employees. The number of sanitarians and other medical men of the first rank participating in the conference, the number and importance of the subjects dealt with, the evidences of excellent facilities in personnel and materiel for preventing and curing disease, and the promise held out of, at no distant day, making available to an amazing extent the natural resources of the territory in which this company operates, makes this a most inspiring volume.

MEDICAL EDUCATION, A COMPARATIVE STUDY By Abraham Flexner, Ambulando discimus, New York. The MacMillan Company, 1925.

"The present volume attempts to make a comparative study of medical education in certain European countries and America against the background afforded by the general educational and social systems of the respective countries. It endeavors to depict and to discuss general tendencies and principles. Under the limitations within which I worked, I could not include all variations and exceptions, though I have, sometimes in the text, sometimes in notes, indicated their extent and importance. The particular individuals and institutions mentioned must be regarded only as illustrations encountered in the course of my reading or experience. While I have tried to be fair, I cannot be sure that I have always chosen the most felicitous examples. I should indeed have avoided all definite references, were it not for the fact that the presentation would then have become both dull and pointless."

"Not only is the part played by the active senses the essential criterion of science; one

may go further—the vast and complicated experimental paraphernalia of science are merely means of extending their scope. Examination of the patient by means of the stethoscope and the clinical thermometer is but a slight, though enormously important, refinement of observation through the unaided senses. Other more accurate and more powerful devices—the compound microscope, the electrocardiograph, the x-ray plate, the fluoroscope—facilitate observation, but do not modify its essential character. They enable the physician to sharpen his natural powers by exaggerating the data, be they sounds or sights, or to translate one sense into another, thus escaping from the less competent senses—touch, weight, and hearing—to the more delicate sense of vision, or, better still, to diminish the danger of error by employing several senses in succession."

The foregoing quotations give a very definite idea of the intent and burden of the discussion of the subject of medical education. The review of the history of the subject in different countries is of great value as a background. It is pointed out that medical schools of three types;—clinical, university, and proprietary, developed each because of special favoring (or compelling) conditions in the several countries. The important influence exerted on medical education in this country by Johns Hopkins is pointed out. Under "General Education," the unique superiority of the French teaching and the great shortcomings of our own, in our respective native tongues, is elaborated at length. The chapters on laboratory sciences, clinics and research work are replete with interest for those who are not smugly satisfied with meager attainment.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS WITH ESPECIAL REFERENCE TO THE APPLICATION OF REMEDIAL MEASURES TO DISEASE AND THEIR EMPLOYMENT UPON A RATIONAL BASIS By Hobart Amory Hare, B. Sc., M.D., LL.D., Professor of Therapeutics, Materia Medica, and Diagnosis in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; One-Time Clinical Professor of Disease of Children in the University of Pennsylvania; One-Time Commander, M.C., U.S.N.R.F. Nineteenth Edition, Enlarged, Thoroughly Revised and Largely Rewritten. Illustrated with 144 Engravings and 8 Plates. Lea & Febiger Philadelphia and New York, 1925.

The very fact of a book coming to its nineteenth Edition is a strong argument for its value. "All the newer remedies, which the author believes to be worthy of employment by his readers, have been included and some of those whose importance has waned, as our knowledge of disease and its effects have developed, have been excluded." A table of solubilities in the front of the book is a feature of decided usefulness. The 1,000 pages are divided in two nearly equal parts, one devoted to drugs and the other to "Diseases," and reme-

dial agents other than drugs. A fine sense of proportion is shown, such important drugs as arsphenamine and digitalis being given great prominence, and those of little or very questionable value being dismissed with scant consideration. On the whole a confidence in drugs is expressed such as few others retain. Two excellent indices one of "Drug and Remedial Measures," and one of "Diseases and Remedies" conclude the volume.

A TEXT-BOOK OF PHYSIOLOGY FOR MEDICAL STUDENTS AND PHYSICIANS By William H. Howell, Ph.D., M.D., Sc. D., LL.D., Professor of Physiology in the School of Hygiene and Public Health, Johns Hopkins University, Baltimore. Ninth Edition Thoroughly Revised. Philadelphia and London, W. B. Saunders Company, 1924.

The foundations of physiology being anatomy and chemistry, and itself the science dealing with function, it is surprising that advances in the knowledge of physiology are not better kept up with. In this volume real advances are noted and a good many reputed ones exploded. In many instances it is frankly stated that our present knowledge is unsatisfactory. (It is important to bear this in mind when considering the appeals of many advocates of special therapeutic measures or contrivances.) The glands of internal secretion are discussed at length. The importance of the thyroid is emphasized. It is stated that in exophthalmic goiter there are indications that other glands are concerned. "Nothing is known in regard to the nature of the supposed hormone secreted by the interstitial cells, and no decisive experiments are reported upon the physiological effects of extracts of this tissue." Much importance is attached to the evidence for more than one internal secretion of the ovary. The internal secretion of the pancreas is dealt with at length. On the whole it may be said of the book that, whatever it lacks in enthusiasm for advances it more than makes up in reliability.

THE SURGICAL CLINICS OF NORTH AMERICA, December, 1924. Volume 4, Number 6. Lahey Clinic Number. New England Deaconess and New England Baptist Hospitals, Boston, Mass. Index Number. Philadelphia and London. W. B. Saunders Company.

This, the index number for 1924, conforms to the usual high standards of these clinics. The first article, supplemented by the six following, traces the study of goiter through its several phases to its present very gratifying status.

Dr. Hamilton's discussion of the "Toxic symptoms referable to the thyroid" is of especial value, inasmuch as he calls attention to a fact which, it seems, has been, to a great extent lost sight of to wit: "The diagnosis of thyroid toxicity is not on a satisfactory basis." In this connection he calls attention to limitations of the basal metabolism tests. Un-

der "Common errors in diagnosis of thyroid toxicity" he says that 30 per cent have no disease referable to the thyroid and "by far the larger portion of this group have no disease whatever."

Jordan, writing on "Functional Disease of the Colon, Differentiated from Appendicitis," concludes, "It is important to distinguish between this condition of bowel distress, entirely amenable to medical treatment, and the two surgical conditions with which it is frequently confused. A careful study of signs and symptoms discussed above usually results in the prevention of surgery in cases of bowel distress."

CANCER OF THE BREAST with a Study of Two Hundred and Fifty Cases in Private Practice by L. Duncan Bulkley, A.M., M.D., Senior Physician to the New York Skin and Cancer Hospital, Consulting Physician to the New York Hospital, Late Member of the American Association for Cancer Research. Member of the American Association for the Study and Cure of Cancer, etc. With Forty Illustrations. Philadelphia. F. A. Davis Company, Publishers, 1924.

This book is based on the authors unusual conception of the nature of cancer and is presented from this different standpoint. His contention is that carcinoma is a local manifestation of a general disease—a carcinosis,—just as a tubercle is a local manifestation of tuberculosis. Animal protein in the diet is regarded as exercising an influence of vast importance in the production of carcinosis, and its exclusion from the diet as having an important tendency toward cure. Local measures are not to be neglected. In some cases chemical removal by Stroebel's method, in which stick potassium hydroxide freely used is the main feature, is advocated. But the idea that the disease is a systemic one is ever kept to the fore. Certainly any idea offering any promise of improving the present deplorable situation as to cancer of the breast is deserving of the fullest consideration.

INFECTIO, IMMUNITY AND INFLAMMATION. A Study of the Phenomena of Hypersensitiveness and Tolerance, and Their Relationship to the Clinical Study, Prophylaxis, and Treatment of Disease by Fraser B. Gurd, B.A., M.D., C.M., F.A.C.S. Montreal. Lecturer in Applied Immunology and in Surgery, McGill University. Associate Surgeon, Montreal General Hospital, Surgeon, Western Pavilion, Montreal General Hospital. Consultant in Surgery and Surgeon in Charge St. Anne's Hospital, Department of Soldier's Civil Reestablishment. St. Louis. The C. V. Mosby Company, 1924.

"Anaphylaxis constitutes the first stage in the immunologic reaction, and, although, under very exceptional circumstances, it may constitute a danger to the life of the animal or individual, it serves a useful purpose in that, in consequence of hypersensitiveness of the tissues to the complex protein molecules which

constitute bacteria, the bacterial cell bodies are immediately recognized by the tissues, as irritants."

Thus it is emphasized that sensitiveness is one of the essentially benevolent processes of nature. Serum and cellular reactions are discussed separately. Infection is regarded as consisting merely of the "entrance into, and growth within, the animal (or plant) of minute living bodies of vegetable or animal origin," and not embracing any of the processes of reaction on the part of the tissue.

As probably bearing on the theory of focal infection it is stated that, "Streptococci and pneumococci produce leucocyte poisons as well as hemolysin; these properties are, however, of relatively little importance." The relativeness of immunity is emphasized. The modes of ent kinds of organisms are discussed on a clear response to the invasion and growth of different and simple manner. There is a closing chapter on the "Application of immunity principles to the prevention and treatment of disease."

THE OPERATING ROOM. Instructions for Nurses and Assistants, St. Mary's Hospital, Rochester, Minnesota. With 144 Illustrations. Philadelphia and London. W. B. Saunders Company, 1924.

This manual is primarily intended as a guide for operating room nurses; but it will serve as a great aid to surgeons and assistants, especially in standardizing their operative procedure.

THE PHYSIOLOGY OF MIND. An Interpretation Based on Biological, Morphological, Physical and Chemical Considerations by Francis X. Dercum, A.M., M.D., Ph. D. Member of the American Philosophical Society; Fellow of the College of Physicians of Philadelphia; Member of the Academy of Natural Sciences of Philadelphia; Professor of Nervous and Mental Diseases in the Jeffersonian Medical College, etc. Second Edition, Reset. Philadelphia and London. W. B. Saunders Company, 1925.

It is encouraging to note that the preface says, "Psychology can only be regarded as a department of brain physiology." So many psychologists express themselves in unintelligible terms that many,—not all of whom are stupid,—have suspected that it was a part of brain pathology. The declaration, in the introduction, that preconceived ideas and beliefs are set aside, adds to this feeling of encouragement. Approach is made through the study of organisms simpler than the human. The discussion of consciousness is particularly clear, and, therefore, instructive. An explanation of the moral sense is attempted. An addendum dealing with "The Pathological Physiology of Mind" makes it plain how we obtain and retain beliefs which have no adequate foundation. A terrific and well-justified whack at Freudism concludes the volume.

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*Appointed to succeed Dr. W. T. Cole, resigned.

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*Appointed to succeed Dr. K. P. B. Bonner, re-
signed.

†Appointed in 1922 to serve for five years.

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Arrangements—Dr. W. C. Mudgett,
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Place and Date of Meeting, 1925—
Pinehurst, April 28, 29, 30.

The Mary Elizabeth Hospital, Raleigh,
announces the association of Dr. O. Ed-
win Finch, with its Medical Department
and Diagnostic Clinic.

The American Board of Otolaryngology
will hold its first examination during
the Meeting of the American Medical
Association in Atlantic City, May 25th
to 28th.

According to the rules of the Board,
applicants are divided into three class-
es.

Class I. Those who have practiced
Otolaryngology ten years or more.

Class II. Those who have practiced
Otolaryngology five years and less than
ten years.

Class III. Those who have practiced
Otolaryngology less than five years.

The type of examination is different
for each class.

The Secretary, Dr. H. W. Loeb, an-
nounces that thus far over three hun-
dred applications have been made.

Resolutions on the Death of Dr.

Marshall Hall Fletcher

We, the members of the Buncombe County Medical Society, wish to put on record the very real grief we feel in the death of Dr. M. Hall Fletcher, one of our most honored and loved colleagues. He has been a valued, influential member of this Society for many long and useful years, and has always been an example to us all, and especially to his younger colleagues, of what the highest type of physician should be, and his high ideals, translated into an upright life, have made it easier for other doctors to live up to the best traditions of our noble profession.

For years he has been one of the outstanding medical men of the city, and a leading and successful and beloved surgeon, but he did not limit his activities and his interests to the scope of our calling, but was active, useful and influential in many causes whose aim was the betterment of conditions in Asheville. A founder, and long the head, of the Board of Health, he gave to it gladly and without price his time, his earnest interest and his ungrudging work, and laid broad and deep the foundations on which our present efficient Health Department was built.

But also in many non-medical civic activities he was constantly though quietly influencing our city and our citizens for good, and we as doctors are proud that our profession should have given such a citizen to Asheville.

Truth, honesty and an unflinching sense of honor and duty were the outstanding qualities of his character and, though he has left us, the blessed influence of these things will live on in our midst, to the good of the community, in the lives of the men he has impressed by his life.

We would wish to express to his widow and daughter and to his family, our very deep and real sympathy in their great loss, and to assure them that his name will ever be loved and honored by the members of this Society. We will also spread these resolutions on a special page of our minutes, that other men in the future may know what manner of man he was.

We will also publish them in our local papers and in those of Hendersonville and in "Southern Medicine and Surgery" of Charlotte, that the City and the State may know how highly we esteemed him.

Finally, in order to keep his name fresh in the memory of all our fellow-citizens, and that his noble example may be a living influence in other days, and to do permanent honor to his memory, we would petition our Commissioners to give his name to some prominent street or park or building in the city as a lasting evidence of the very general and deep appreciation by his fellow-citizens of the fine work of many kinds which he did for the good of Asheville.

O. F. ECKEL,

M. L. STEVENS,

CHARLES L. MINOR,

Committee of the Buncombe County
County Medical Society.

February 2nd, 1925.

The McDANNOLD

Surgical and Gynaecological Chair

BUY THE BEST! 10,000 in use in the U. S. 700 in St. Louis, Mo. SURE TO PLEASE. Received Gold Medal at Louisiana Purchase Exposition held at St. Louis, Mo. Write for circular and big discount.

A. McDANNOLD

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Dr. J. W. Long, Greensboro, N. C., will pay liberally for copies of the Transactions of the North Carolina Medical Society for the years 1877, 1878 and 1880.

Southern Medicine and Surgery

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CHARLOTTE, N. C. APRIL, 1925

No. 4

HOW CAN WE GET TO THE PUBLIC AS WELL AS THE PROFESSIONS OF NURSING, DENTISTRY AND MEDICINE THE CORRECT INFORMATION IN REGARD TO CANCER?*

JOSEPH COLT BLOODGOOD, M.D., *Baltimore*

In some localities cancer is a preventable disease. Its prevention depends upon correct information. With this correct information the individual will recognize the warning and should immediately seek examination when the removal of the causes will be followed by the disappearance of the local trouble, or, if not, the local area can be removed before cancer has developed. I am confident that my records for thirty years clearly demonstrate that this statement is correct in regard to the skin and oral cavity. Cancer of the skin and of the oral cavity are preventable diseases. Their prevention depends upon a purely educational effort. All adults must receive and understand the correct message.

In other localities, as yet, we have no positive evidence that cancer is a preventable disease. In this instance the cure, especially the largest possible chance of a cure, depends upon the element of time. For example, the patient will feel a lump; the lump may, or may not, be cancer. If it is not cancer delay is not dangerous. If it is cancer every day's delay reduces the chances of permanent cure.

The public and the majority of the profession do not realize the importance of this element of time and that delays are dangerous.

My own studies of the material which

has collected in the Surgical Pathological Laboratory of the Johns Hopkins hospital for thirty-four years, emphatically show this danger of delay and when in the beginning we rather thought it was months, we now know it is days.

The Ministry of Health of England has collected and published statistical studies of more than 20,000 operations for cancer of the breast with this definite conclusion: The per cent of three- and five-year cures depends upon two factors—the completeness of the operation and the duration of the lump.

Some years ago, in restudying all our cases of cancer of the breast in relation to five-year and permanent cures, I found that there was but one controllable factor—the duration of the lump.

At a recent meeting of State Chairmen and Regional Directors of the Southern States in New Orleans during the meeting of the Southern Medical Association I wrote in a letter as follows:

"In regard to the breast, it is quite possible to get women to come for examination with an average time of nine months after feeling the lump. But my evidence shows that the real permanent cures will not be influenced until the majority of women come within one month after feeling the lump."

Cancer of the cervix may or may not be a preventable disease. Only time and further observation will demonstrate this. But it is essential that all women should know the danger of delay if they observe anything unusual in the monthly discharge.

The science of Medicine and Surgery allows us to make a correct diagnosis and to institute the appropriate curative treatment. But if the public is uninformed, ignorant, the vast majority seek advice at a period of the disease when correct diagnosis and the most skillful

*This message in brief was delivered before the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, at Leonardtown, October 18, 1924.

treatment offer very little chance of a cure.

I am able, from personal observation and correct records, to contrast the difference between the first decade 1890 to 1900 and the successive decades since then, and to demonstrate the great improvement since 1920.

This may be briefly summarized as follows: Previous to 1900 the surgical clinic rarely saw lesions of the skin and oral cavity in the preventable stage. Since 1920, in my own clinic, more than fifty per cent of the patients seek examination and treatment in the stage of prevention before cancer has developed.

Before 1900, especially in the oral cavity more than fifty per cent of the cases were inoperable, and of those on whom the complete operation could be performed, more than ninety-five per cent were in the late stages for which the complete operation offered less than ten per cent chances of a cure. Since 1920 the per cent of inoperable cancer in the oral cavity has been reduced to ten, and the per cent of early cancer has increased from five to more than fifty. An early cancer of the oral cavity properly treated, has at least eighty per cent chances of a permanent cure, and the necessary complete operation is not mutilating. In late cancer of the oral cavity, as stated before, the chances of a permanent cure are less than ten per cent, and the complete operation is more or less mutilating.

In my own clinic I rarely see a hopeless case of cancer of the skin, or a malignant pigmented mole in which the chance of a permanent cure is less than one per cent. The majority of patients today, with lesions of the skin, come to the surgical clinic before the lesion has become malignant, or if malignant, it is in such an early stage that the complete removal under local anesthesia with knife or cautery, is possible, with almost one hundred per cent chances of a cure.

In the breast, as in the skin and the oral cavity, the educational effort of the medical profession has accomplished striking results. The per cent of inoperability has decreased from fifty-five

to almost five per cent. Since 1920 almost ninety-five per cent of patients who have presented themselves in my clinic have received the benefit of the complete operation. Before 1900 this was possible in less than one-half.

There is also another decided improvement: previous to 1900, with the rarest exceptions, the axillary glands were involved. This means a possible five-year cure varying from ten to twenty-five per cent with a large probability of death from internal cancer after five years. Since 1920, in almost one-third of the cases the axillary glands are not involved with cancer, and this means that the patient's chances of a five-year cure are more than seventy per cent with very little probability of death from cancer after the five-year limit.

It is interesting to note that the last five consecutive patients in my clinic came under observation before the lump had been observed one month. In only one of these, at operation, did the lump prove to be malignant, the glands were not involved, and this patient has more than seventy per cent chances of a cure.

HISTORY OF THE EDUCATIONAL CAMPAIGN

This really begins from my colleague's, Dr. Thomas S. Cullen's, Committee in 1913. Cullen and his committee appointed by the American Gynecological Society, conceived the idea that whatever was to be written for the public should be done by one of experience in journalism and literature. Mr. Samuel Hopkins Adams was selected. Mr. Adams visited the clinics with the largest experience in this country, dined with the surgeons and gynecologists to get their point of view, and received from some clinics, in writing, the actual figures of conditions at that time. They were somewhat better than in the decade between 1890 and 1900, but not much so. Mr. Adams, after his personal investigation and with all the data which he could obtain, wrote his articles for the public which were published in the Ladies' Home Journal, in Collier's Weekly and McClure's Magazine. These

articles made a tremendous news impression and were copied and discussed widely in the daily public press.

The next most important factor in the educational effort was the organization in New York City of the American Society for the Control of Cancer. Its educational efforts and campaigns have been efficacious, efficient, sane and continuous since. I feel confident that the great changes for the better in the cancer situation throughout this country are largely due to the efforts of this Society. It must be stated that it has had, to a certain extent, the help and co-operation of the medical profession, of County, State and National medical, dental and nursing societies. The medical press throughout this country has never failed to help as much as possible.

While it is possible to educate a few and carry the correct information to thousands, it is a far more expensive and difficult undertaking to reach the millions and masses of this country. In the first place, it is a huge undertaking to get the following simple statement to every adult woman in America: "If you feel a lump in your breast today, you should be examined by a physician tomorrow." Even if you get the message to them,— that perhaps is not the larger part: they must *understand* it; they must be influenced to act upon it. Many adult women have no family physicians or medical advisers. Many of the masses are at sea how to select them. It is hard to convince them that a lump in the breast is just as much an emergency or an acute disease as an agonizing pain in the abdomen, or a bleeding wound or broken bone, and that they must see a physician at once.

What is true for a lump in the breast is true for the beginnings of cancer in every other locality. With few exceptions the beginnings of cancer never impress the ignorant and uninformed as anything serious. Extreme pain is rarely present, interference with function is late, loss of weight and weakness as a rule are symptoms of general metastasis. With rare exceptions, the ignorant and uninformed adult will not seek the advice of the medical profession

in the stage when cancer can be prevented or in the stage of cancer, when correct diagnosis and appropriate treatment offer the largest assurance of a permanent cure.

It is therefore justifiable to state that the cure of cancer is a problem of education.

Local Effort as Well as National Effort. In my letter to the State Chairmen and Regional Directors of the American Society for the Control of Cancer during the meeting of the Southern Medical Association in New Orleans November 25, 1924, I wrote as follows:

"To get the medical profession and the public to understand the relation of time to the cure of cancer, there must be a local organization and a local effort as well as a national organization and a national effort. Not until every member of the medical profession realizes that correct information must be conveyed to the patient, and not until the different localities shoulder the responsibility of educating their own people, will all appreciate the element of time in such a way that it will really affect the ultimate mortality of cancer."

The figures which I have just given in regard to my own clinic are a good demonstration of the efficacy of a local educational effort combined with a national. From the very beginning the daily press of Baltimore and Maryland have never failed to cooperate and have given freely space for any correct information in regard to cancer. At least once a year, in Maryland, in city and county, there has been an effort to bring before the public and the profession the correct information in regard to cancer.

My own evidence shows that both, profession and public, are as well informed in regard to cancer as any community of the same size in this country or perhaps throughout the world.

I feel confident that the national effort needs more money, in order to distribute more widely the correct information which we already have in regard to cancer. The American Society for the Control of Cancer has a small book entitled *What Every Doctor Should Know About Cancer*. This is now be-

ing revised and rewritten, and it will continue to be revised and rewritten from time to time. But it is an expensive proposition to place this book in the hands of every doctor in the country. Yet, every doctor should have it.

Then there is a second book on *What Everyone Should Know About Cancer*. This also will be rewritten and revised from time to time and translated into many languages and distributed to the public as far as possible.

Then there are smaller pamphlets for nurses and social workers and for the public.

The printing and distribution of this necessary literature are costly and that is why the national effort needs even greater financial backing.

The Local Effort Requires a Larger Number of Recruits From the Ranks of the Nursing, Dental and Medical Professions. It would seem that members of the nursing, dental and medical professions do not comprehend the necessity for giving their own patients correct information in regard to cancer. In fact, they are very apt to neglect the entire field of preventive medicine and personal hygiene. Their entire time is taken up in looknig after their patients who send for them when they are sick. They do not seem to realize that their failure to help these patients in the majority of instances is because their patients, through ignorance and lack of correct information, do not send for their doctors in time. Many of these members of the dental and medical professions exhibit the same neglectful attitude towards themselves and their families.

In my card index of doctors referring patients of which we have records since 1890, I have definite evidence that a certain number of doctors in general practice and in the specialties do not neglect themselves or their families and do in some way get correct information to their patients and their families, because the records of their patients show that they consulted these doctors early, received a thorough examination and were immediately referred to the surgical clinic.

When I came to Baltimore in 1893 I

found here in practice a classmate of mine, and I told him of the importance of early operation for appendicitis and also about the immediate examination when the patient felt a lump in the breast. This classmate died some ten years ago, and I looked over the histories of the cases which he had referred to me or the surgical clinic during twenty-five years and I found that not a single case of appendicitis died after operation, because none had peritonitis on admission, and very few of his cases of appendicitis had to be drained. This was in striking contrast to the general type of appendicitis admitted to the clinics in those early years. I also found that the majority of the very early lumps in the breast were referred to us by this physician. There must have been some different relationship between him and his patients. These figures show that they always sent for him the moment they were taken sick.

I could repeat this again and again. There are doctors today who always see their patients in the early stage of their illness, whatever it may be, who are consulted a few days after the lump is felt, who see the mouths of their patients before the leucoplakia or area of irritation becomes cancer, who are consulted within one month of the appearance of an unusual discharge, while with other doctors the patients consult them too late. My card index shows distinctly that on the whole the majority of the medical profession do not delay, but there is a great contrast between a certain small group whose patients always consult them earlier and a larger group whose patients consult them later, and, in cancer, often too late.

This, therefore, is the idea that I wish to convey to the members of the medical profession:—how can you, as individuals, instruct the members of your own families and your own patients to send for you for a thorough examination the moment they feel a lump, or observe an unusual discharge, or notice a white spot or a soreness of the mouth, or experience discomfort within the abdomen.

What Physicians in General Practice Can Do. The more confidence your patients and your family have in you, the quicker they will confide to you their troubles. My evidence shows that at the present time doctors in small cities and in country practice see their patients in the earlier stage of the disease than physicians in large cities.

Of course, cancer is not the only thing that people need instruction about, and there are national societies not only for cancer, but for tuberculosis, infant mortality, child hygiene, mental hygiene, heart diseases, infant feeding, and many other. It makes it difficult for both, the general practitioner and the specialist to know just where to stop and just what to say. But I am confident from my evidence, that the conversation of a good doctor with his patients not only conveys the correct information, but as a rule, when it is conveyed in this way, it is more apt to be understood and acted upon.

Any doctor who will write the American Society for the Control of Cancer at 370 Seventh Avenue, New York, N. Y., can get any literature or leaflets that he may desire for his patients.

Counties and County Societies. In practically every county in this country there is a Medical Society, and at least once a year there can be a discussion on cancer as an educational problem. Every State in the Union has a Chairman representing the American Society for the Control of Cancer. There should be no difficulty, through him and his Committee, to stage from time to time, in the hospital of the County or the city a Cancer Clinic which has been made so successful and popular by Dr. Wainwright of Scranton, Pa. The correct information in regard to Cancer which can be obtained in the books and pamphlets published by the National Society in New York, should be given to your newspapers from time to time for publication.

Nevertheless the great local effort is what each individual doctor does for his own family either by conversation or distribution of leaflets. To repeat, I have evidence that some doctors are do-

ing it because they are referring to the surgical clinic the lumps of the breast of one month's duration, the lesions of the mouth and the skin before they are cancer, the unusual discharge within a few weeks, abdominal cases within a month or two. Now these doctors could not refer early cases unless their patients came to see them in the earlier stages. These early cases cannot be explained entirely by what has been read in the newspapers, or heard in public lectures, because all people have the same opportunity. *We must learn the secret, why do the patients of some doctors come for examination before they are sick, or the moment they are ill.* The fact cannot be disputed. However, in the majority of instances, with the majority of doctors, patients suffering from cancer seek their advice for the first examination late. In order to cure cancer this must be changed. People must see their own doctors within a few days or a month after the first symptom. The National Society, the State and County Committees will continue to push their educational efforts, but the best results will not be obtained until every member of the medical profession, whether in general practice or a specialist, feels a certain amount of responsibility, of conveying correct information to his family and to his patients, and cancer is one of the many diseases in question.

We must repeat here the conclusions of the wonderful study of the literature by Dr. Janet E. Lane-Clayton, who, for the Ministry of Health of England, studied more than 20,000 operations for cancer of the breast, with the conclusion that there were two factors chiefly responsible for the failure to cure—the duration of the lump and the incompleteness of the operation. When the duration of the lump was short and the operation complete, the five-year cures of cancer of the breast often reached eighty per cent.

Therefore, we must educate the public on the life-saving importance of this element of time and ourselves, so that when the patient comes early the operation will be proper and complete.

BORDERLAND OF MEDICINE AND DENTISTRY*

GUY R. HARRISON, D.D.S., *Richmond*

Oral Surgeon to Stuart Circle Hospital and
McGuire Clinic

Having selected the above title I find myself somewhat dismayed at the immensity of my task. My only excuse for attempting to discuss the elusive borderland between medicine and dentistry is that in my daily work as an oral surgeon I am thrown into intimate contact alike with physicians and with dentists, and I believe that through this association I get something of the viewpoint of each.

The practitioners of medicine and of dentistry should remember that the real reason for their existence is that they may render service to humanity and that the difference between the practitioner of the healing art and the business man is that the business man seeks to make money and the practitioner to make life happier. With this thought before us we can see with startling clearness the utter absurdity of the antagonism that formerly existed between physicians and dentists. I am delighted to see that this antagonism is fast disappearing.

It is a strange fact that medical educators, in the training of the physician, leave out any real teaching concerning the mouth. On the other hand, the lack of training in the basic medical sciences, as was the case until recent years in dental teaching, was just as strange. Among both types of educators there appeared to be an agreement that the mouth was a thing apart from the body. In democratic America one is apt to forget that until recent times the physician as such had "no standing at court" and that the barber was also the surgeon. It may be added that the village blacksmith was the dentist, and still is in some localities.

Reference today is often made to the

return of dentistry to medicine. To quote Kirk, editor of the *Dental Cosmos*: "There has never been any separation between medicine and dentistry, for in its essence dentistry is medicine, using that term in its broad sense, but because of the unwillingness of organized medicine to acknowledge dentistry as one of its legitimate specialties, co-equal in importance with the other recognized medical specialties, the science and art of dentistry in 1839 was organized upon an autonomous basis independently of the organized body of medicine. Dentistry has since enjoyed a phenomenal growth that has finally brought it to a position of commanding importance as one of the leading factors in the conservation of the public health" * * * * and again, "What the ultimate destiny of dentistry may be with reference to its position as related to organized medicine is a secondary question: Our own belief is that dentistry will continue to fulfill its function as a humane calling in the service of humanity upon a basis of autonomous organization with the same purpose and upon a professional equality with each of the sister medical specialties."

It is believed that dentistry has justified its right to be classed in its relations with medicine the same as the recognized specialties. Dentistry is often referred to as a specialty of medicine, but the meaning in which the expression is used differs. As generally used, it is believed to have reference to the relationship to medicine that ophthalmology has, for example. It is obvious that such relationship does not exist between dentistry and medicine. To illustrate: one holding a degree in medicine and having a license may practice ophthalmology, as he has had certain fundamental training in this field, but, not having the same training in dentistry, he cannot practice this branch of medicine. Likewise, the dentist cannot practice ophthalmology. Dentistry is defined in laws governing its practice as a specialty in medicine and surgery. By this is meant that dentistry is a special branch of medicine, and as such bears, in so far as the practice of it is con-

*Read before a joint meeting of the Mecklenburg County Medical Society and Charlotte Dental Society, Charlotte, N. C., March 10, 1925.

cerned, the corresponding relation to medicine that the specialties do. Since, as stated, dentistry is related to general medicine as other of the specialties, it behooves the members of both professions to make every effort to bring about a more cordial relationship. While both professions work together after a fashion the rate of improvement is slow. There should be a common literature and we should meet together for the discussion of our problems, to the end that our service to our patients be improved. There should be dentists on the staffs of hospitals, and they should be a part of organized medical groups. The selection of the dental member of such staffs should be made only after careful investigation as to his ability and standing in the dental profession. Unfortunately, often this is not done. Physicians should be members of dental societies, and dentists of medical societies. Despite the fact that in 1887 the American Medical Association passed a resolution declaring dentistry a specialty of medicine and providing for those holding the D. D. S. degree to become members, it is strange that there are very few medical societies to which dentists are eligible for membership. It is likewise equally strange that there are but few dental societies to which physicians are eligible to membership. It may not be amiss to call your attention to the fact that dentists holding Associate Fellowship in the American Medical Association have all the privileges of Fellows. It is to be regretted that comparatively few dentists have availed themselves of this opportunity.

In order to place dentistry in its proper relation to the practice of medicine, it is necessary that the medical practitioner know more of dentistry. I shall speak frankly of this and ask that you bear in mind that my statements are made with the highest motive of interest in medicine as in dentistry, but above all with the good of the patient in mind. Medical men as a class are not interested in dentistry, so they do not acquaint themselves with mouth pathology or the problems the dentist has to face. To the average practitioner

of medicine, dentistry consists of filling cavities in teeth and supplying lost ones. There is not the spirit of co-operation between us that there should be and the patient often suffers as a result. Both dentists and practitioners of medicine are to be blamed. The correction of this fault depends upon mutual understanding. In order for the physician to understand the problems of dentistry he should be grounded in the fundamentals of dentistry just as the modern dentist is in medicine. No one, I am sure, would advocate teaching the undergraduate medical student technical dentistry but he should be taught pathology of the mouth, its clinical recognition and treatment, at least equally with the instruction given him in, say:—Ophthalmology, Laryngology and Otology. It is to be hoped, if medical education is to undergo the revolutionary changes that now seem imminent, that this condition will be corrected.

The following is taken in part from an editorial appearing in the Medical Record for March, 1921. In an appeal for closer affiliation between the two professions, the editor says: "This mistake of aloofness or assumed superiority on the part of the medical profession was made when dentistry began to acquire a standing as a branch of therapeutics, with the result that the two professions have long existed side by side, semi-antagonistic and mutually ignorant of each other's teachings. It is only recently that the inconvenience of this duality in surgical practice has begun to enter the minds of practitioners of both professions, and in consequence there has been a mutual drawing together of the leaders in these two branches of the healing art * * *".

It is my belief that the patient would be better cared for if a mouth examination could be a part of the study given every case. This examination should be made by one trained in this field, that is, by a capable dentist. Likewise an untold amount of good could be accomplished if dentists were trained to recognize the symptoms of many general diseases and have their patients exam-

ined by a well trained physician.

When a physician refers a patient to a dentist he should supply the dentist with all the information he has in reference to the case, for it should be remembered that if the dentist treats a patient upon the basis of the mouth being a thing apart from the rest of the body he is falling far short of the measure of his responsibility. He should demand of the dentist a real mouth examination and not an inspection of the teeth for caries. Time does not permit discussion as to what constitutes a mouth examination but in my opinion such an examination is not complete without a roentgen-ray examination of the teeth, the jaws and often the maxillary sinuses. The x-ray findings should be interpreted by one experienced in clinical pathology of the mouth. It is to be remembered that the real value to be secured from an x-ray examination lies in the positive findings. L. R. Main, in the *International Journal of Orthodontia, Radiography and Oral Surgery*, for February, 1921, states: "To my mind, one of the greatest detriments to an x-ray examination of the teeth and jaws lies in the prevalence of this examination by those not thoroughly trained in this particular field of work. The mistakes made are simply appalling, and some of the interpretations would be a joke if it were not so serious." Unfortunately, the criticism that he makes is all too true and applies both to physician and dentist.

It is true in dentistry, as in general medicine, that each embraces a scope too wide for any ordinary mind to grasp, and of necessity has been divided into specialties, each with its possibilities and its problems. In the past the dentist knew too little general medicine. Those in charge of dental education have been making a sincere effort to correct this. No one will deny but that it is desirable for a dentist to have a medical degree. The dental course now covers four crowded years, and in medicine the interne year is being rapidly demanded, thus it would require a minimum time of seven or eight years to obtain both degrees. You will agree

that this would necessitate efforts out of proportion to the end sought. It would be a splendid thing if our medical and dental schools would combine their teachings so as to grant both degrees within a reasonable limit of time.

I realize that in a paper of this nature a discussion of mouth infections is expected. The time at our disposal is not sufficient to take up this subject in detail. Permit me here to incorporate certain conclusions reached in reference to mouth infection:

1. There is no such thing as a harmless mouth infection.

2. Mouth infection may be the primary cause of disease elsewhere in the body. Often it is an influencing factor.

3. Contrary to the usual belief, in the majority of cases the infections about the root ends of the teeth are of a non-suppurative type, and their harm to the body is due to toxins rather than to metastatic invasion by the organisms themselves. It is unwise and often dangerous to attempt to eradicate by surgical means many chronic foci of infection at one time. The old adage; "Make haste slowly" should guide us.

4. The claim that no pulpless tooth can be safely retained is as absurd as the effort to retain all pulpless teeth, no matter how badly diseased or how ill the patient may be. Physicians should not order teeth removed nor should dentists carry out such orders unless both are familiar with what modern dentistry can accomplish in eradicating disease about pulpless teeth. The same applies to infections of the investing tissues of teeth. It is to be noted that the term pulpless tooth refers to what is often incorrectly called "dead tooth."

5. To attribute many ailments to mouth infection is poor logic, but to stop one's ears to what seems well proven facts is equally illogical.

6. Whenever the diagnosis of mouth infection is made we should always remember that we are dealing with a condition that has the potential power of very serious trouble. In many instances there will probably be no ill effects, but the possibilities should always be considered.

7. It is not necessary nor right to remove a useful pulpless tooth unless pathology or bacterial invasion can be found. The writer is well aware of the fact that the presence of bacteria does not within itself constitute disease, but the presence of bacteria within interstitial tissue, carrying on their life cycle and the reaction of the tissues to their presence, does constitute disease.

8. Both medical and dental professions need more accurate information on this subject, more painstaking, and, therefore, better diagnoses, and a better sense of clinical values.

I have made criticisms of some physicians and subscribed to the opinions of others in the full realization that the sins of commission and omission of the dental profession are many. These criticisms have been entirely impersonal and made in an effort to encourage progress. The recriminations of the past should either be forgotten or become additions to the store of unpleasant memories. We should remember the yesterdays for their lessons taught and anticipate the tomorrows for the opportunities which they will bring. We should remember that our function is to such as this should serve to stimulate us render service to mankind; and meetings to make that service better and to recall

"There is a destiny that makes us brothers;

None takes his way alone.

All that we send into the lives of others
Comes back into our own."

302 Professional Building.

A PLAN TO SUPPLY PHYSICIANS IN RURAL SECTIONS OF THE STATE (USING RUTHERFORD COUNTY AS AN EXAMPLE)

W. Chivous Bostic, M.D.,
Forest City, N. C.

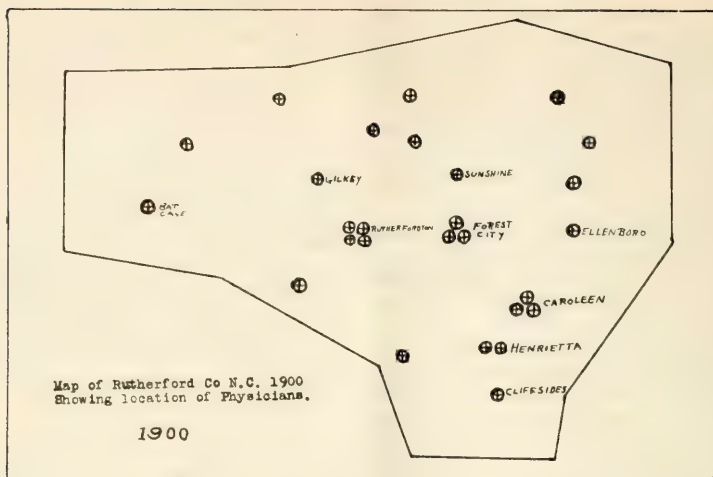
I wish to call your attention to a condition existing in our county with reference to lack of medical attention in the Rural Districts. After giving this situation some thought and consideration, I find we are confronted with an economic problem of great importance. Investigation shows the rural population drifting toward the industrial centers of the county and becoming consumers instead of producers, hence the high cost of living.

These people are leaving the farms because of their inability to procure proper medical attention. In one township about twenty-five per cent. of its population has moved to the cotton mills of this and other sections. The community spirit and the pleasure of living in the country is waning because of this acute condition.

The time has come when this problem must be solved, and in order that you may understand the matter of which I am speaking, I have prepared three small maps of Rutherford county, illustrating the problem we are trying to present. I understand that the same condition prevails in almost every county in North Carolina and even throughout the United States.

First map sketch shows the location of the physicians of our county in 1900, before the Standard of Medical Education was raised to the required four-year high school course, two years college work, and the four-year course in a Class A Medical College.

Second map shows the location of the physicians of Rutherford county today (1925). You will note the number of general practitioners has decreased from 28 to 14. The light area of this map shows the territory that is reasonably served by the doctors of the county. Notwithstanding the population of this area has increased from 12,000 in 1900 to 29,000 in 1925,



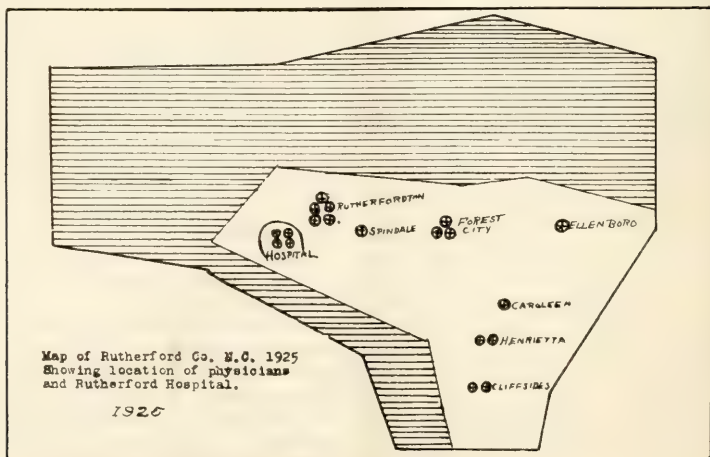
the light area represents a six mile field each way for each physician in the county or the territory to which he can give satisfactory service.

Third map shows the location of physicians of the entire county as of 1930, with suggestions for the solution of the problem when carried out by the plan I wish to offer for your consideration and criticism, which is as follows:

First; it will become necessary to establish a Class A Medical College in North Carolina.

Second; the four year high school course is provided already and within reach of every boy in North Carolina (free).

Third; the County Board of Health will act as a local committee to pass on the qualifications and fitness of these



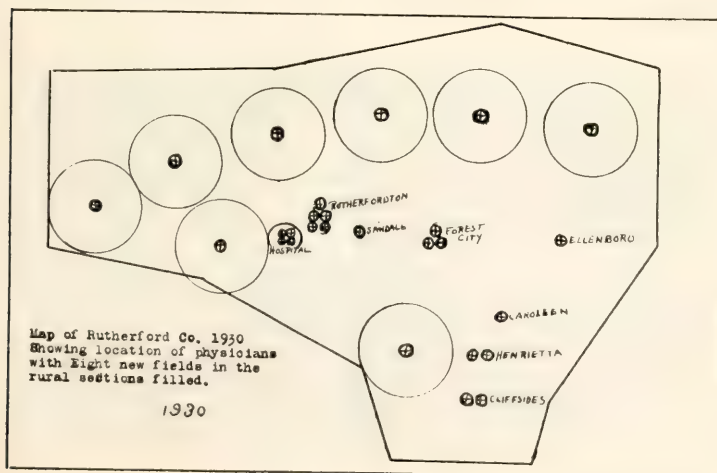
high school graduates applying for admission, and receive a bond in the sum of \$1,000 as a guarantee of good faith to insure the completion of this course in college, and in the North Carolina School of Medicine. They will select four to six applicants each year who will be entitled to free scholarship, covering tuition and all fees except board, for a two-year course in any one of the standard colleges of the State; namely, State University, A. & E. College, Wake Forest, Duke University, and Davidson College. After completion of the two-year course in either of these colleges, the applicant will be entitled to a scholarship in the North Carolina School of Medicine, which will cover the regular standard course as prescribed by the American Medical Association.

Fourth; after completion of the two year's college work and the four year's course in medicine, the faculty of the Medical School will issue a certificate (not a diploma) to the applicant which will entitle him to apply for examination before the State Board of Medical Examiners of North Carolina. After the applicant has passed the required and regular examination before the Board he will then receive from the State Board of Medical Examiners a limited license, which will entitle him

to practice medicine in any of the Rural Health Centers in any county of North Carolina, established by the County and State Boards of Health. The applicant accepts the limited license in consideration of the free tuition in college and school of medicine.

Fifth; after the physician has practiced medicine in one or more of these Rural Health Centers, as prescribed by the County Board of Health, for a period of ten years he will then be permitted to receive endorsement by the local Board, and on return of his Medical certificate and his limited license to the North Carolina School of Medicine and the State Board of Medical Examiners, he will receive his regular diploma and regular North Carolina State license as of date of his graduation and examination before the Board. During this period of practice in one of these Health Centers, he will be entitled to all the privileges of the County and State Medical Societies. He will also make insurance examinations, act as industrial physician and surgeon for any industries within his field.

Sixth; after five years of practice in one of these Health Centers, should he decide to withdraw from this field he will have the privilege of paying back his tuition fees to the College he at-



tended, also to the North Carolina School of Medicine, with 4 per cent interest, and on payment of the above fees he will receive his diploma, which will entitle him to receive his license before the State Board of Medical Examiners.

Seventh; this plan will give all the rural sections of our State an educated physician. It also places the college course, together with the regular course in Medicine, in reach of every boy with limited means, from farm and elsewhere, the chance of securing the regular Medical Course without lowering the present high standard of Medical education.

Eighth; community life and spirit will be restored to the people in need of medical attention. A great economic question will have been solved, consumers will return to the farm to become producers again, thereby lowering the high cost of living.

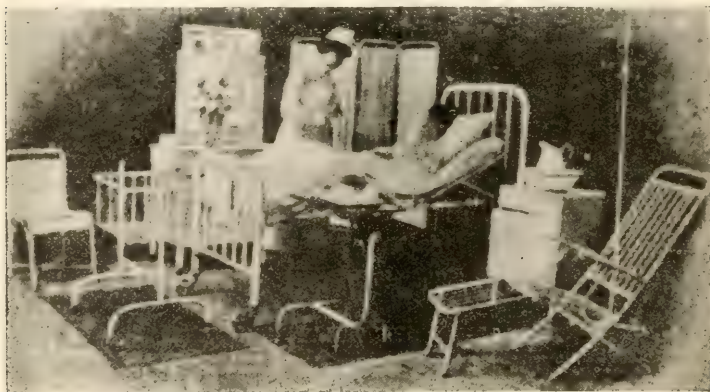
Ninth; the cost of the above plan to the State will be but a trifle and is not to be considered seriously. A special tax of one per cent on patent and proprietary medicines and drug specialties would more than finance the plan. The money expended in other States for education of our doctors will be retained largely in our own State. The scarcity of physicians will be relieved throughout the State. The boy with an ambi-

tion to study medicine will have the chance of the Medical course and the privilege of serving his own, and as Aycock said, "He will have the chance to bourgeon out all that is within him."

Tenth. North Carolina is proud of her history of the splendid progress being made in every walk of life. She soon will have constructed and paid for one hundred million dollars' worth of good roads. She pays more income tax to the United States Government than any other State in the Union except New York and Pennsylvania. Her public school system is second to none in the United States. She has one of the greatest Universities and has provided for the education of her women, her farmer boys, textile workers, engineers, etc., but has failed to provide for a finished doctor.

Eleventh. Will this, the most progressive State in the Union, allow her rural population to suffer and die from want of medical attention? This plan could be placed in operation at the opening of the Colleges in the Fall season. The present Legislature should provide for the erection and maintenance of a Class A Medical School situated in the central part of the State in one of its largest cities.

Twelfth. The County Board of Health, in conjunction with the State



Board of Health, will make a survey of the needs of each county and establish a District composed of one or more townships. This District will be known as Community Health District (or Center), No. 1 to No. 8, of Rutherford County. The citizens of these various Community Health Centers will be asked to co-operate in the extension of better Medical attention to its people and help supply a whole-time graduate or pupil nurse, together with the following equipment, to be used as the case may demand: A linen chest containing sheets, pillow cases, blankets, towels, gowns, and other dressings and supplies; also an outfit consisting of hospital bed springs, and mattress, a nurses' cot, and other equipment such as hot water bottles, syringes, rubber gloves, dressings, etc. With the above outfit any home within ten miles can be hospitalized or made quite as comfortable as a room or ward in a hospital within one hour. There should be provided an additional, similar outfit for the tubercular patients. This equipment consists of small tent, or porch tent, so that the tubercular patient will have the comforts of the modern tubercular sanatorium in his own back yard or lawn. He will be removed from his infected room of flies, bed bugs, and foul smelling bed clothing, etc., to a nice clean cot, with screens and other accessories, such as sputum cup, clinical charts, diet lists, and printed instructions as prescribed by the State Board of Health.

With such an equipment as mentioned, and as offered in the above photograph, we will be able to teach sanitation and cleanliness, and bring all the comforts of a modern hospital to the rural homes of our county. An organization of this kind can be effected and put into force with a very small outlay of money, not to exceed \$500.00. It will give the Church people of the various communities an opportunity to carry out the Master's command—"To preach the gospel, to teach, and to heal the sick." Let us do it today "BEFORE IT IS TOO LATE."

"If you've a tender message or a loving word to say,
Don't wait till you forget it, but whisper it today,
We live but in the present, the future is unknown—
Tomorrow is a mystery, today is all our own.
The tender words unspoken, the letter never sent,
The long-forgotten messages, the wealth of love unspent—
For these some hearts are breaking, for these some loved ones wait,
So show them that you care for them before it is too late."

DETAILED DESCRIPTION OF THE FERGUSON TUBAL PATENCY TEST

Robert Thrift Ferguson, M.D., F.A.C.S.,
Charlotte

Since publication of my paper reporting the findings in a series of cases with the use of my simplified apparatus for testing the patency of the fallopian tubes¹ I have been flooded with letters asking for details as to preparation of patient and use of the apparatus,² and as it is manifestly impossible for me to answer all these inquiries personally I am asking the indulgence of the editor for going into this matter in detail. I had thought on account of the many articles dealing with the Rubin³ apparatus all who were interested in the test were probably familiar with the details and any further explanation on my part would be superfluous. However, for the benefit of the physician who has never performed the patency test, and who is interested in the simplified apparatus,⁴ I shall give every detail of the operation so that those who have not seen or used it may be able to do so with safety.

I am particularly anxious that the utmost care shall be taken in carrying out the technic so that it may not fall

into disrepute in the hands of a single physician who undertakes it. Properly done there is no danger, but in the hands of a novice the simplest operation may much for the benefit of the patient as become dangerous; therefore it is as the physician that I do this. I beg the indulgence of those who happen to be familiar with this technic.

The following paraphernalia will be necessary: The Ferguson glass tube; 2 ounce rubber ear syringe bulb; bivalve, Sims or self retaining speculum; tenaculum forceps; mercurial manometer; cotton swabs for drying the cervix and painting with iodine. The rubber bulb can be purchased at any drug store. Clip the tip off so that it can be easily slipped over the butt end of the glass tube. Sterilize glass tube with bulb attached along with the other instruments. In using this glass tube for nearly two years I have never had the misfortune to break one either from handling or in the sterilization and I consider the danger from this to be negative.

Presuming that you have previously examined your patient and know the position of the uretus, and the condition of all the pelvic organs, you are now ready to proceed. With the patient on the table in the dorsal position, feet in the stirrups, a bivalence or other speculum is inserted, all mucous or other secretion is removed and cervix painted with iodine. Grasp the anterior lip of the cervix crosswise with the tenaculum, about half inch from the os, and insert the tip of the glass tube into the cervix until the bulb plugs the cervix, then attach rubber tube leading to manometer to side arm on the tube. The curved tip will be inserted into the cervix up or down according as to whether the uterus is in normal position or retroverted, just as you would the sound or dilator. With the rubber bulb in the hand force the air into the uterus very slowly, allowing from 15 to 20 seconds to complete the operation, always pressing the tube firmly into the cervix, using the forceps for counter pressure to prevent the escape of air around the tube. You will be surprised to find how

little pressure this really requires. If either tube is patent the air will enter the peritoneal cavity at anywhere from 20 to 200 m.m. of Hg. I would strongly advise that you do not run the pressure above 200 m.m. in any case, no matter how strong the temptation might be, and in this way you will keep away from the danger line. If the tubes are patent you will feel the pressure give under your fingers and the mercury will begin to tumble. This is one of the nicest and most delicate points about this test, as the instant the air enters the peritoneal cavity the sensation is transmitted to the fingers and you can release the bulb and prevent only the smallest quantity of air entering the peritoneal cavity thereby limiting the amount of pain that might follow should a quantity of air be introduced.

Probably every physician has in his office a mercurial manometer in connection with his blood-pressure apparatus and this is all that is required. Personally I use a Baumanometer simply because I happen to have one of this make. In regard to the use of speculum, you will soon learn which is the most convenient in a given case. In certain cases, especially where you have a long anterior and posterior vaginal wall, the bivalve is the most convenient; where these are short a Sims or self-retaining speculum will be found desirable. I always boil at least two so that there will be no delay and everything will be for the comfort of the patient. The most significant use of the apparatus is in cases of sterility for these patients come in increasing numbers wanting to know why they cannot conceive, and if you can demonstrate that the tubes are closed then you can give them a positive reason for this condition, otherwise it is a guess with you. I can hardly conceive of a man curetting a patient in this enlightened age for sterility until the tubes are proved to be patent. I find the test equally valuable as a diagnostic aid in all pelvic conditions where occlusion of the tubes is probable but cannot be definitely determined by palpation. I have now operated upon a considerable num-

ber of my cases which the test showed to be occluded and the diagnosis has been confirmed in every case. This has been a source of great satisfaction to me in prosecuting my work along this line. In answer to another question I might say that the test is always performed in my office (with the proper female attendant) except in cases where I am called to see a patient who is already in the hospital. It is a source of much gratification to me to be able to tell you that the pain connected with this operation is so inconsequential that my patients do not hesitate to return for the second and even third test when indicated. I have had no uncomfortableness lasting beyond one or two minutes in a single case. Practically all patients complain of a sensation in the uterus during the test as though they were going to menstruate, which is due to the pressure of the air in the uterus, and which ceases as soon as the pressure is released. To tell which tube is patent, in case only one is, it is only necessary to have a trained assistant place stethoscope over region of the tube and hear the air bubbling through.

I have come to the conclusion, following a large number of tests, that air will pass through absolutely normal tubes at from 20 to 40 m.m. of Hg., and in abnormal ones anywhere from this to 200 m.m. I think there are many tubes that are normal for all practical purposes, and in persons who are capable of conceiving, that do not permit the passage of air up to at least 100 m.m. or above, due probably to slight kinks, fine adhesions, or to a certain amount of contractility of the muscular coats of the uterus and tubes from the insult offered the mucosa and the terminal nerves by a foreign body—air.

In reply to questions concerning the use of the x-ray, I find very little practical use for the x-ray in my gynecological work except in the differential diagnosis of genito-urinary conditions such as stone in the bladder and ureters, kinks in the ureters, and other conditions of like nature, and as a therapeutic measure in the treatment of certain inoperable tumors and metror-

rhagias. I rarely make a definite diagnosis of closed tubes by a single test except in cases where the physical findings are such as to justify it, but usually have the patient return in anywhere from ten to thirty days, preferably half way between the periods for the second test.



There are a few contraindications to the test which I think it advisable to mention, such as acute pelvic conditions; acute gonorrhoea; menstruation; large masses in the pelvis, with or without temperature; severe forms of cardiac or pulmonary disease, and where pregnancy might be suspected.

In conclusion I desire to urge you to be gentle in all your manipulations in making this test and not to cause your patient any undue pain for if you do the fault is in your technic.

1. Journal A. M. A., Vol. 84, No. 5, Jan. 31, 1925.

2. Described in Surgery, Gyn. & Obs. 39: 831, Dec., 1924.

3. Journal A. M. A., 75: 661, Sept. 4, 1920; Am. Jour. Roentgenol. 8:120, March, 1921; *ibid.* 8: 459, Aug., 1921.

4. "Ferguson apparatus for testing the patency of the fallopian tubes" Mfg. by Eimer & Amend, 3rd Ave., 18th-19th Sts., New York City.

Prophylaxis of Valvular Heart Disease*

F. C. RINKER, M.D., *Norfolk*

If we study vital statistics and the records of hospitals and clinics, we become appalled at the large morbidity and mortality percentages of cardiac diseases. Of the 3,764,000 men who were sent to camp in 1917, 550,000 were rejected. Over 3 per cent of all men drafted were disqualified on account of organic heart disease.

Out of 148,000 examinations of school children in Detroit, Schmidt found 1373 with some abnormality of the heart. Such an examination carried on in New York leads Halsey to estimate that about 200,000 school children in the United States are suffering from heart disease.

The toll of life demanded by cardiovascular disease is greater than that of pneumonia, typhoid fever or tuberculosis, as shown by a study of life insurance records.

Halsey has shown from figures that 10 per cent of the total capacity of hospitals and 20 per cent of the space in ambulatory clinics is given to cardiovascular cases.

The question should interest us, not only from a standpoint of health, but from a viewpoint of economics. Large amounts of money are being spent yearly in the larger centers for the care of cardiac cases among the poor, to say nothing of the money spent and time lost by the able-to-pay patient.

What is the problem? The answer is, find the cause of causes and remove before the damage is done.

As to the causes of valvular heart disease, heredity or tissue predilection, faulty metabolism, toxemias and infections have been discussed for years. Regardless of argument, infection is either directly or indirectly the cause of organic heart disease with the exception of congenital malformations of the

valve leaflets or septa of the heart.

The protection of the heart against disease should begin in youth. The most frequent infections causing this malady are:

1. Acute rheumatism.
2. Scarlet fever.
3. Tonsillitis.
4. Upper and lower respiratory infections.
5. Infections in the urinary tract.
6. Syphilis.

The child suffering from any of the acute contagious diseases, or acute rheumatic fever, should be managed as a potential heart case, and every care should be instituted in the protection of the heart against metastasis of infection to this organ. When evidences of syphilis are present, this should be treated by antisyphilitic measures. So much for the acute infections.

There is another group of cases just as important, namely: those cases in whom there lies dormant, some focus of infection in the open avenues or in the secondary locations for foci. The mouth, accessory sinuses, throat, genito-urinary tract, and rectum are subject to primary foci of infections and the harboring of infections at all times. The appendix, gall bladder, kidneys, joints and ears are in like manner subject to secondary foci of infection. From these many possible sources the heart is constantly in danger of damage by metastatic infection or toxemia.

With this in mind let us then consider all cases, showing evidences of infectious toxemia as potential cardiac cases, and, on account of this, put forth greater effort to find and remove as completely as possible all foci of infection before the cardiac damage is done.

In conclusion, let me say, that since man is not made infection-free, let us use all methods at hand in an attempt to help him fight infection for the pres-

*Read before the 27th Annual Meeting of the Tri-State Medical Association, February 18-19, 1925.

ervation of that vital organ, the heart.
109 College Place.

References

1. Schmidt, H. B.: City Health, Detroit, June, 1922.
2. Halsey, R. H.: Jour. A. M. A., No. 14, April 7, 1923.

Discussion

Dr. Franklin D. Wilson, Norfolk:

When I saw the title of Dr. Rinker's paper I really thought that it would be open, possibly, to some attack. It is always more interesting to attack a paper than anything else. But I do not now feel that way at all.

The title of his paper is "Prophylaxis of Valvular Disease of the Heart." Now, we have to make a sharp differentiation in our minds between valvular disease and heart disease. Dr. Rinker's paper is devoted to heart disease. I thought possibly he was going to discuss the prophylaxis of valvular disease itself. The prophylaxis of the valve is so unimportant, and the consideration of the heart itself as a complete organ is so important, that I am very glad he discussed the subject in the way he did. The essential point we have to remember, not in speaking of the valves, but of the heart itself, is that the possibility of development of heart disease (that is, any change in the muscle of the heart) is always present in all infections, even in those affections of the respiratory tract commonly called colds. We have to bear this in mind in all infections. The possibility of definite heart disease is a thing we have to bear in mind at all times. As I said, I thought possibly Dr. Rinker was going into the valves themselves, and I was going to combat the idea that Cabot seems to be trying to develop right now, and drive home the distinction between heart disease and valvular disease. Some of you may know that Cabot discredits the possibility of mitral regurgitation and has a little section called "mitral regurgitation," in which he says that the diagnosis is not a proper one. But I think that it is a proper diagnosis. I

believe simply on the sound of a systolic murmur developing in the course of any of these three infections we may make that diagnosis. We may dodge it a little by saying mitral disease. The point I want to drive home is that in infection, acute or chronic, minor or serious, our attention must be fixed on the heart all the time. These things disappear absolutely, but the results of these toxic or pathological conditions in the heart muscle can be perfect cures, we can prevent any permanent damage if we are thinking of prophylaxis. If we remember they are so very common we can prevent any damage to the heart muscle, which is, of course, the important thing.

CALCAREOUS CHANGES WHICH TAKE PLACE IN THE PROSTATE GLAND (TRUE PROSTATIC CALCULI ILLUSTRATED BY CASE REPORTS)*

(Lantern Slides)

Hamilton W. McKay, B.S., M.D.,

Crowell Clinic of Urology & Dermatology

Charlotte

Probably no part of the seminal tract occupies such a conspicuous place in current medical literature as does the prostate. Much as we know about it today that we did not a few years ago, due to the rapid development of urology as a specialty; there is much more we do not know and in many respects the prostate still remains an enigma.

The large variety of functional disorders classified as neurasthenia in the male, have a sexual basis, and in such cases the prostate always has to be reckoned with. If we regard the prostate as the barometer of the sexual apparatus, then we cannot be too careful to avoid errors in diagnosis of prostatic conditions. By careful routine examination of the prostate and allied structures, including roentgen ray studies, causes for so-called neurasthenia in the

*Read before the 27th Annual Meeting of the Tri State Medical Association, February 18-19, 1925.

male can often be found. Among the many morbid processes of this gland, calcareous changes and prostatic calculi are least written about and probably least understood.

Are true calcareous changes and deposits in the prostate gland rare in comparison to other disorders of this structure, or have problems more difficult of solution, overshadowed them? If calcareous changes in the prostate are so rare as to only arouse your curiosity then this discussion is of doubtful value; but, on the other hand, if the common infections and secretory disorders of the prostate are likely to be forerunners and often direct causes of stone formation, then chronic prostatitis and prostaticorrhea which resists the ordinary accepted treatment should be more carefully studied.

CLASSIFICATION

Prostatic calculi should be classified as primary and secondary or true and false. I would supplement this classification by adding calcareous degeneration of the prostatic gland. Primary or true prostatic calculi are situated within the glandular substance itself; i. e., within the prostatic capsule. Secondary or false calculi are of other origin than the parenchyma of the prostate. Most often they originate in the kidney, bladder or (possibly) the urethra and become lodged in the prostatic urethra. The latter are impacted urethral stones rather than true prostatic calculi. Calcareous degeneration, is a result of chronic suppuration, where incrustation and deposits of lime salts around small particles of pus have supplanted the parenchyma of the gland. The radiograph shows a shadow, the outline of which forms a true mould of the prostate gland.

In the literature we find much confusion as to classification. Many authors do not attempt to distinguish between the true and the false prostatic calculi, which have no relationship. The final differential diagnosis between primary and secondary stones in the prostate must be made by a laboratory examination of the nucleus of each.

OCCURRENCE

Many writers on this subject state that prostatic calculi are rare. Thus Legueu, in 1895, wrote that there were no calculi in the prostate, but only in the prostatic urethra. Marion, in 1906, said the existence of prostatic calculi is doubtful and of no clinical importance. Kretschmer's report in January, 1918, brought to light 165 cases reported of true prostatic calculi and with his series of 8 cases, brings the total number to 173 cases reported up to that time. There is no doubt in the writer's mind that there are many unrecognized cases with calcareous changes and deposits in the prostate gland whose symptoms are unrelieved because the *possibility* of such a condition is either not considered or is overlooked.

FORMATION

The definite cause of true prostatic calculi is not known, but it is reasonable to believe that alkaline urine and any infectious process which invades the prostatic urethra and prostatic ducts is a predisposing cause. In chronic inflammation, the prostatic ducts secrete abnormally, drainage is interfered with and certain lime salts may be deposited around the normal prostatic constituents. According to Thompson, the corpora amylacea, having attained the size of their enclosing follicles, act as foreign bodies, which sufficiently irritate the mucous membrane to throw out a deposit of calcium phosphate and carbonate, ultimately resulting in calculi. False prostatic calculi are urinary stones which have become lodged in the prostatic urethra and which rapidly increase in size from the constant deposit of urinary salts. Chronic suppurative inflammations of the prostate may rarely end in calcification around small particles of pus and sometimes incrustation of the whole prostate and capsule.

SYMPTOMATOLOGY

It is quite evident from an understanding of the pathology that no group of symptoms will properly characterize this condition. We cannot make a diag-

nosis from clinical symptoms alone. For convenience we may divide such cases into two groups; first, those not producing symptoms and in which the calculi are found accidentally by routine examination. In this group the patient comes to us seeking relief for some other condition. An example of the first group is a case with a clinical picture of benign or malignant hypertrophy associated with prostatic stone. In the second group are the cases whose symptoms are due to the presence of the calculi. The three most important symptoms are, (1) pain; (2) symptoms of abscess formation; (3) urinary symptoms, as frequency, burning dysuria, prostaticorrhea. The remote symptoms are rectal and sexual in origin.

The associated pathological conditions as analyzed in Kretschmer's report of 173 cases are very interesting. Seventeen cases showed urethral stricture. In 15 cases there was an associated benign hypertrophy and in one case there was malignancy of the prostate. Eleven of the reported series had stones in the bladder; one had renal stone and one ureteral stone.

DIAGNOSIS

Prostatic stone is rarely considered as a possibility and consequently the diagnosis is seldom made. The roentgen ray is the most valuable agent upon which we depend to establish a diagnosis of calcareous changes in the prostate and has to be depended upon in most cases. Roentgen ray examinations are often not made in prostatic conditions, as is revealed by a review of the case reports, and I cannot emphasize too strongly the importance of the roentgen ray studies in all prostatic conditions. Rectal examination with and without an instrument in the urethra is a valuable aid in diagnosis, and if such an examination reveals uniform hardness or nodulation with increased thickness between the instrument in the urethra and the examining finger, we should suspect prostatic bar, tuberculosis, malignancy, or stone. Crepitation, if elicited, is diagnostic in itself,

but the absence of all of these rectal and urethral findings does not mean that stone can be excluded, because deep seated calculi produce no rectal findings and we must depend on the clinical examination and x-ray for a final diagnosis.

TREATMENT

In cases of true prostatic calculi where the stones are small and are not producing symptoms, no treatment should be advised. Careful observation and repeated x-ray examinations should be made to determine the increase in size of stones. In cases of benign hypertrophy associated with prostatic calculi, and in cases of true prostatic calculi producing symptoms, removal of the stones, or the gland with the stones, by the perineal route is the operation of choice.

CASE REPORTS

The following are condensed protocols of the clinical history of three cases which illustrate calcareous changes which may occur in the prostatic gland. The cases in the order presented represent:

- (a) True prostatic calculus;
- (b) False prostatic calculus or urethral calculus;
- (c) Calcareous degeneration of the prostate gland.

Case A, File No. 13,400, Mr. W. H. H. B., Hamlet, N. C., admitted to the clinic, November 20, 1924, and referred by Dr. N. C. Hunter, Hamlet, N. C., male, age 52, married, 2 living children and 1 dead child. Occupation, real estate broker.

Chief Complaint: (1) Intense burning on urination; (2) great frequency of urination (8 to 12 times at night, 6 to 8 times during the day.)

Family History: Negative for cancer and tuberculosis. Parents died at ages 84 and 85, respectively.

Past Venereal History: Denies ever having any venereal infection.

Past Medical History: Measles, whooping cough, chicken pox in childhood. Infected foot at 12 years of age. Has never had any serious illness, ac-

cident or operation.

Present Condition: About 5 years ago began to have intense burning on urination which was followed by fre-



Fig. 1—Case A

Showing small shadows in the region of the prostate which proved to be true prostatic calculi at operation.

quency and bilateral epididymitis, the latter condition confining patient to bed for five weeks. He estimates that during 1924, on account of his urinary symptoms, he was incapacitated for about 50 per cent of his time.

Examination: Appearance is that of a fairly healthy adult male, but one who is very nervous and apprehensive. He thinks he has lost about 15 or 20 pounds in weight. Nothing of special interest in general inspection of patient except that he impresses the examiner as one who is highly neurotic. Blood pressure S. 110, D. 70.

External Genitalia: Nothing remarkable.

Rectal Examination: The prostate is hard and feels thickened and indurated to the examining finger. The exquisite tenderness of the prostate is the outstanding feature of the rectal examination and I consider it very significant and suggestive of stone.

Cystoscopy: The patient is very nervous and hard to cystoscope and instrument is introduced with difficulty. The bladder shows a sub-acute infection in

the region of the trigone and in and around both ureteral openings. Around the right ureteral opening appears to be a superficial ulceration. No prostatic hypertrophy.

Laboratory: 11-20-24 *Urine:* Acid; albumin and glucose negative; Sediment: few pus cells, numerous epithelial cells (usual type), no casts, no blood.

11-20-24 *Prostatic Smear:* Pus cells numerous (in clumps), no organisms found.

11-20-24 *Blood:* W. B. C. 7,500; Wassermann negative.

11-20-24 *X-ray:* X-ray No. 2274 several small shadows in bladder region; otherwise, negative.

11-24-24 *Urine:* Acid, glucose negative, albumin definite trace; Sediment:

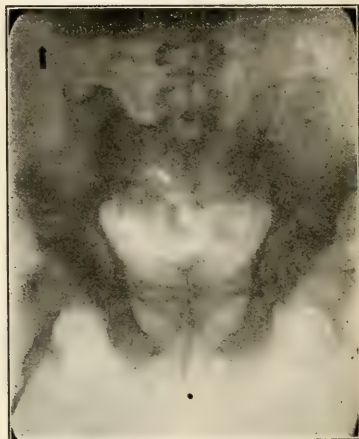


Fig. II—Case A

Showing patient with ureteral catheters in place. No prostatic hypertrophy.

Pus cells very numerous, no blood, no casts, no bacteria.

11-25-24 *Intravenous Phthalein:* Total 2 hours 68 per cent.

11-25-24 *Blood:* Non-protein nitrogen—41 mg. per 100 c.c.; creatinin 1.1 mg. per 100 c.c.

11-26-24 *Urine Sediment:* No tubercle bacilli found.

11-26-24 *Culture of Bladder Urine:* Heavy growth of a Gram-negative bacillus.

11-29-24 *X-ray:* X-ray No. 2274

shadows in bladder base as of prostatic calculi.

12-1-24 *Urine from Ureters: Right*—No pus, an occasional R. B. C. *Left*—No pus, no blood.

12-3-24 *Urine Sediment*: No tubercle bacilli found.

12-3-24 *Prostatic Smear*: No tubercle bacilli found.

12-8-24 Guinea pig inoculated with urine sediment 11-24-24. Animal died this date. Autopsy shows a bronchopneumonia. No tubercle bacilli found in smears from site of local inoculation. No tubercles found anywhere.

Operation: 12-5-24: Patient having been prepared for perineal prostatectomy, the usual incision was made. Nothing remarkable about the exposure of the prostate. When the capsule was incised there were many multiple abscesses from which creamy pus exuded. There were also multiple calculi from the size of a millet seed to that of a split

X-ray of extirpated gland shows the same shadows which upon section of the gland are seen to be large corpora amylacea with some calcification.

Pathological Report: Prostate removed 12-5-24. Chronic interstitial prostatitis to a marked degree. Large corpora amylacea, some 3 to 5 mm. in diameter and black in color; many smaller ones, many showing Ca salt deposition (these gave shadows in the x-ray). No malignancy.

One of the larger stones was broken in half,—one half being pulverized and examined chemically, the other half be-

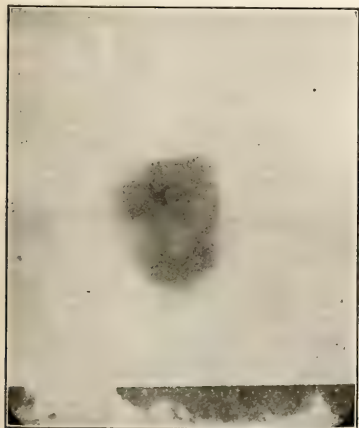


Fig. III—Case A

Gland after prostatectomy showing stones inside of the prostatic capsule.

pea which were brought out of the prostatic substances during the operation. There was no evidence of hypertrophy of the prostate either cystoscopically or at operation. The wound was closed in the usual manner with drainage and the patient made an uneventful recovery.



Fig. IV—Case A

Photograph of true prostatic stones.

ing examined microscopically by oblique illumination. Chemically the stone was found to consist largely of calcium phosphate with a considerable amount of organic matter admixed. The direct examination of the architecture of the calculus showed it to consist of various layers of a white crystalline substance demarcated by alternate and thinner layers of a brownish-black substance.

Case B, File No. 4465, C. E. W., Hartsville, S. C., age 54, farmer, referred by Dr. J. L. Powe, Hartsville, S. C.

Chief Complaint: (1) Incontinence of urine; (2) general pain and discomfort in the region of the perineum.

Family History: Negative.

Past History: Had ordinary diseases of childhood, but no complications. No serious illness or operation. Patient had always been exceedingly

healthy until the present illness began. Had accidental injury to the perineal region 8 years ago. One year before this injury, had an attack of renal colic.

Past Venereal History: Denies having had any venereal infection.

Present Illness: Began 8 years ago after being injured by horse falling with him. The heel of one horse shoe was forced against the perineum and posterior urethra. After this, the symp-

thra around the stone shadow.

2-2-21—Very large stone removed by perineal section from prostatic urethra, the stone extending into the vesicle neck and showed a distinct ring where the bladder gripped the stone. Patient left the hospital 3-21-21 with incision healed and voiding through the urethra.

Case C, File No. 8241, F. A. D., Sanford, N. C., male, age 59, Oc. Unable to work. Referred by Dr. O. L. Miller, Gastonia, N. C.

Chief Complaint: Pain and inability to move left hip. Patient however had dribbling and inability to retain his urine for any length of time. He was referred for our opinion as to his prostatic condition.

Family History: Father had asthma and mother died of pulmonary tuberculosis, age unknown.

Past Medical History: Had measles and enteric fever. Never had a severe illness except as has a bearing on his present condition. At the age of seven he had a fall from a porch swing injuring his right tibia. Swelling and pain followed and in four days swelling was incised. Necrosis of the tibia followed and drainage continued for 18 months when the wound in the tibia healed. A similar condition immediately began in his left hip. At the age of twelve he had a purulent urethral discharge with



Fig. 5.

Illustrating true prostatic calculi occurring with multiple vesicle calculi. Proven at operation.

toms of pain and dribbling greatly increased and patient states that he has not been able to sit down for 6 years and has had dribbling of urine for the past 4 years.

Examination: Fairly well nourished male adult with pinched expression and symptoms of a toxemia. General examination unremarkable except for local urinary condition plus toxemia.

Laboratory: Urine—Definite cloud of albumen, abundant pus cells, numerous R. B. C., an occasional granular cast.

Blood—W. B. C. 22,200. Non-protein nitrogen 116.2 mg. per 100 c.c. of blood. Preformed creatinin 2.6 per 100 c.c. of blood.

X-ray—Shows large stone in the posterior urethra extending into the vesical neck.

Cystogram—Shows filling in the ure-



Fig. VI—Case B

So called, false prostatic calculi, urethral stone located in the prostatic urethra.

a terminal hematuria which was diagnosed as gonorrhoea. He was thought to have had a stone in the bladder and a perineal section was made. A sequestrum of bone was removed from the prostatic urethra and the patient afterwards passed two small pieces of bone through the perineal wound.

Past Venereal History: Denies having had any venereal infection except as diagnosed above.

Present Condition: Patient's condition dates from early childhood and on December 4, 1922, he regards his urinary symptoms as of secondary importance, but is now seeking relief for his

should be made of all patients with persistent prostatic symptoms.

2. The roentgen ray is the most valuable aid in establishing a diagnosis in calcareous changes in the prostate gland.



Fig. VII—Case B

Giant false prostatic calculus after removal. hip condition.

Rectal Examination: Shows a small, but fixed prostate which is of smooth stone-like consistency. With a metal catheter in the prostatic urethra and one finger in the rectum a grating sensation is elicited.

X-ray Examination: Shows shadow which is an exact mould of the prostate gland with what appears as a calcareous tract extending towards the left hip.

Note: This patient was not interested in his urinary condition and refused to have a complete examination or to return for further study.

CONCLUSION

1. That careful roentgen studies



Fig. VIII—Case C

Showing calcareous degeneration of the prostate. Following prolonged bone suppuration. Case referred by Dr. O. L. Miller, Gastonia

3. In chronic suppurative conditions of long standing and in secretory disturbances of the prostate that do not respond to the accepted methods of treatment, stone formation is always a possibility.

4. The absence of symptoms, in many cases makes a diagnosis very difficult, and the condition is frequently overlooked, as is shown by autopsy.

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Discussion

Dr. A. J. Crowell, Charlotte:

We should watch carefully for prostatic stones in cases of undue frequency of urination. Of course, in these cases of prostatic stone we always have inflammation and infection, and it is the tendency of all of us, when we find that the patient has a prostatitis, to stop our investigations, massage the prostate, and try to get relief in this way. Of course, it is impossible to cure your patient with the prostatitis if there are calculi in the prostate gland, and we should always go over our cases again and again to see if there is anything else we can find other than the prostatitis. In fact, we should always go into our cases more carefully, I think, than we do. I think it is quite well, with

these severe symptoms of prostatitis, to take x-ray pictures during our examination.

I want to say that Dr. McKay worked out these cases, and they are the only cases in which we made the diagnosis before operation.

Dr. McKay, closing:

I became interested in this subject about four years ago. The condition is more frequent than we expect, because in our very limited experience we have seen three or four cases of calculi of the prostate gland.

I want to say just a word about the last case. As you see there, the prostate gland is filled with stones. That man refused cystoscopy or anything like a complete examination. I did put a metal catheter into his urethra, with which a grating sensation was elicited. So far as I know, there is only one case in the literature.

Cardiospasm; With Report of Two Cases*

DOUGLAS P. MURPHY, M.D., *Rutherfordton, N. C.*

Cardiospasm, clinically, is a narrowing of the lower part of the esophagus which produces a partial or total obstruction to the passage of food into the stomach.

Various causative agents have been suggested. These include spasm, atony, inflammation, fissure and kinking of the which produces a partial or total oesophagus; also irritability of the vagus nerve, pressure from an abnormally shaped liver, tumors, infectious diseases, infections of the lesser omentum and foreign protein sensitivity. The true cause is still unknown.

The chief symptom is dysphagia varying in frequency and severity with the progress of the disease. Dilatation of the esophagus above the point of narrowing is usually present, and regurgitation of food is a frequent symptom varying with the severity of the condition. The symptoms may begin very

early in life and the condition may never become serious. In other cases the obstruction may become almost absolute in a matter of months. Starvation symptoms follow, sometimes with a great loss of weight.

The history together with fluoroscopic and x-ray study usually clear up the diagnosis. These are confirmed by the beneficial effects following dilatation of the affected part. Organic stricture can usually be ruled out as a result.

The following two reports indicate what can be expected from the hydrostatic dilatation method of treatment:

Case No. 1. Miss H. H., white female, age 18, examined and treated six months ago reported a gradually increasing inability to swallow her food, lasting about 18 months. She regurgitated most of her food after every attempt to eat and was very weak. Her weight was then 119 pounds.

The x-ray showed a very marked nar-

*Read before the 27th Annual Meeting of the Tri-State Medical Association, February 18-19, 1925.

rowing of the lower third of the esophagus, with a compensatory dilatation above. An olive-tip bougie passed readily into the stomach. The treatment consisted of passing a hydrostatic dilator to the point of narrowing and a three-minute dilatation was given using a maximum pressure of 25 pounds. The next food swallowed passed the narrow point with ease. For three months this continued. For the past three months there has been a very occasional discomfort on swallowing. The patient in the meantime has gained 26 pounds and has taken up nursing training in the Rutherford hospital.

Case No. 2. Mrs. W. R. W., age 20, was first examined two months ago. She gave a history of a sensation of tightness when the food passed a certain place in her lower esophagus. She also regurgitated some food at each meal and had lost thirty pounds in weight.

The fluoroscope confirmed the diagnosis. The hydrostatic dilator was used as in the first patient. Relief was also immediate in this case. A letter received from the patient last week states that she has already gained ten pounds, can eat anything she wants to, and the only thing which she regurgitates is apple, which only comes up at times.

These two case reports illustrate very well what can be expected from the use of the hydrostatic dilator in cases of cardiospasm. The symptoms are not always cured but from the patient's standpoint the relief of distress is very great. Perhaps when we know more about the cause we can do still more for the patient.

Discussion

Dr. R. C. Fravel, Richmond:

I became very much interested in cardiospasm about ten or twelve years ago, because of a case we had of a coal merchant in this city who had lost a great amount of weight, and because Plummer, at a meeting in Pittsburgh, had just described his hydrostatic dilator. By one dilatation this patient was en-

tirely cured of symptoms that had obtained for twenty or twenty-five years, gained some weight, and was cured for the rest of his life. We have had in St. Luke's Hospital some cases during the last fifteen or twenty years. Three or four years ago I reported fifteen of these cases in a paper read before the Medical Society of Virginia. I think, as Dr. Murphy does, that the condition is not a very frequent one. We sometimes pick up a medical article in which some one has reported one or two hundred cases of cardiospasm. A great many of these cases have been cured by the administration of belladonna or some other drug that acts on the involuntary muscles. From my understanding of cardiospasm, these cases are not cardiospasm at all.

As to the cause, we do not know. It seems that there must be some ulceration or something of the sort in the cardia, because it is so similar to rectal fissure. One complete dilatation is sufficient to bring about complete cure.

As to the amount of pressure, Dr. Murphy says he uses so many pounds pressure. I have found that when you use a dilator for some considerable time the rubber becomes worn out. I always turn the water on and see how much pressure there is against my hand for this particular time, because this time the dilator has not as much elasticity as it had last time.

There is one symptom which Dr. Murphy did not mention, though of course he did not go into the symptoms particularly. With this one exception the symptoms resemble those of stricture of the esophagus. That is, the patients have as much difficulty in swallowing liquids as in swallowing solids, and between the times that the attacks are not severe they take one thing as well as another.

We always pass the Plummer's dilator under the fluoroscope, with a very small amount of barium given previously, so as to be sure that the dilator has entered the opening the proper distance. That is important, because in the dilation that occurs above this stricture the opening in it is not always at

the bottom. We have had two cases in which the opening was away off to the side; it had been pulled over, and had caused a pouch there. One case was getting fairly good results by filling his mouth full, holding his breath, and by making a tremendous effort the food would jump into the stomach. Another case was treated by the old method, opening the stomach and manual dilation. That case was a very old lady, almost in extremis when she entered the hospital, and she died.

Dr. A. L. Gray, Richmond:

I think there is a confusion in the conditions to which the term cardiospasm is applied. The cardiospasm to which we refer is a serious condition; the cardiospasm reported in such large numbers is a transient spasm. I think there should be a distinction in terms as well as in meaning. What Dr. Murphy has reported is cardiospasm; the gastro-enterologists report spasm of the cardia, which is a temporary thing, and not necessarily a serious condition. I think there is no non-malignant condition with which I am familiar that shows such remarkable and such satisfactory results as the treatment of these cases of cardiospasm. An individual suffering for years, emaciated, starving to death, perhaps requiring an hour to swallow half a tumbler of milk, after dilatation of the esophagus with the hydrostatic dilator can go ahead and eat like any other individual. The results obtained are wonderful.

Dr. Fravel has referred to the use of the fluoroscope in controlling the introduction of the dilator. In one case particularly, the case of the old lady that he reported, her esophagus extended something like this (illustrating on blackboard). That is one of the distinctions between spasm of the cardia and cardiospasm. After slight difficulty in introducing the dilator we gave this patient a little barium, and discovered the dilator passing down here. Now, if we had continued to force this dilator, it would of course have gone right through the convex side of this curve, and we should have had perfor-

ated esophagus, with disastrous results. So, after seeing that the attempt was absolutely futile, we abandoned it and resorted to the retrograde method of dilatation. The use of the filiform, swallowing of a string, and passing catheters over the string, has resulted in success in many instances, but as a general rule careful, painstaking attempts, under the guidance of the fluoroscope, will enable you to get through, and by administering a little barium in some fairly thin menstruum we can tell whether the dilator is actually through the office or not. If it is not through your efforts will be in vain.

Dr. C. S. Lawrence, Winston-Salem:

The difference between cardiospasm and spasm of the cardia is one of duration only, as I see it. If you have spasm of the eye muscles which exists for a few minutes or a few hours, it is soon over with, but those that have spasm of the eye muscles for weeks or months are hard to cure and become chronic. Researches have shown beyond any doubt, I think, that the muscles receive two sets of nerve fibres, medullated and non-medullated. It is my belief, from the experience I have had with cardiospasm and spasm of the muscles, that this condition is due to irritation of the sympathetic nerve filaments, and that this irritation, as a rule, is brought about by some form of infection—focal infection. The first case of cardiospasm that I saw had existed for four years following typhoid fever, in a man about forty-four years old. This was eight years ago. He had not been able to take any nourishment for four years except soups and broths, strained. He could not swallow coffee grains, even, he said. His teeth had become decayed from non-use, and the gums were in bad shape. I passed an esophageal bougie on him about twice, I think, and after that he was able to take some solid food, potatoes, etc. Then he had his teeth extracted and his mouth cleaned up, and became well and is well today. Another case was that of a woman who began to have epigastric paroxysms and pains coming on at night, then began to re-

gurgitate food, solid foods such as apples, etc. After that water would be regurgitated. She came to the hospital and was diagnosed gall bladder disease, with cardiospasm, proved by operation and x-ray. The gall bladder was removed, with one large stone. She stayed well while in the hospital, about four weeks. In about a month after going home the cardiospasm returned. She came back to the hospital, a duodenal tube was introduced, and she was fed for two days in that way, and was then able to take solid food. She remained in the hospital for some time, getting along well, and was then sent home. The cardiospasm soon returned, and she still has it. What he ought to do is to clear up focal infections in these cases.

Dr. R. P. Finney, Gaffney, S. C.:

Soon after I began practicing medicine I had a case of duodenal ulcer. The appendix had been removed through a McBurney incision, without exploration. The duodenal ulcer had become very stubborn. The patient, a man of about thirty-five, was put on a modified Sippy treatment, and was put in bed, and did splendidly. He had no symptoms of cardiospasm. After approximately eight months or a year the ulcer apparently was cured. He had normal emptying time of his stomach—which, by the way, at first was twelve hours. A barium meal at first stayed in the stomach two hours. Within about another two months he came back, unable to take any liquid food at all, though he could take some solid food. His favorite food was crackers; he would take about six or eight a day. He kept them in his pocket all the time. I sent him to Dr. Friedenwald, in Baltimore, who confirmed the finding of healed duodenal ulcer, with some adhesions causing cardiospasm, and sent him back, advising me to dilate him. I used the Murphy dilator bag of silk and rubber, on the end of a stomach tube, dilated by water. He became better under this treatment and has had practically no symptoms for about a year and a half. This apparently was reflex, from his old ulcer.

I think it is Dr. Smithies who says that cardiospasm always has its basis in an unstable nervous system—that we find it in nerotic people. My next case was a very striking instance of that, also bringing out the point of which Dr. Lawrence spoke. This was in a woman who was very weak, very emaciated, who had been unable to eat anything much for three years. She was in bed all the time. We tried the Murphy dilator, without success, and tried to pass an esophageal bougie, also without success. The cardiospasm was self-evident. Upon further examination I found she was suffering from very severe hookworm infection, one of the most severe I had ever seen. I treated her for that, first with oil of chenopodium, with no results whatever; then with the old thymol treatment, with very striking results. In a month she was suffering from no cardiospasm whatever, which seems to bear out the fact that this cardiospasm was the result of toxemia from the hookworm infection. She is well now, and has been well for two years, during which time she has gained sixty-five pounds in weight.

Dr. Murphy, closing:

In our hospital, whenever we have any symptoms at all of this condition, we make a routine study of the esophageal conditions. This first patient had very marked ptosis. She has gained twenty-six pounds, and her stomach has been elevated up to the proper position, bearing out the theory of feeding patients to cure the condition of ptosis.

SURGERY OF MESENTERIC INJURIES WITH REFERENCE TO INTESTINAL VIABILITY BASED ON CLINICAL AND EXPERIMENTAL EVIDENCE.*

T. C. Bost, M.D., *Charlotte*

Keen says, "in penetrating wounds of the abdomen, injury to the mesentery is one of the most common and serious lesions encountered." Hemorrhage it-

*Read before the Medical Society of the State of North Carolina, April, 1924.

self may be fatal from injured mesenteric vessels; slits in the mesentery lead to hernia; but aside from this and what I especially wish to emphasize, is that mesenteric injuries are of importance in proportion to the extent to which the integrity of the blood supply to a given intestinal loop is compromised. So that a mesenteric injury cannot be considered as a clinical entity but as an intestinal injury as well.

In addition to injuries resulting from trauma of the mesentery, we have also to consider the surgical removal of cysts and tumors of the mesentery, as their removal may affect the viability of an intestinal loop. Therefore in dealing surgically with traumatic injuries and new growths of the mesentery, it is necessary to arrive at a rather definite conclusion as to how much of the blood supply can be sacrificed and yet leave the affected loop viable. Failure to resect a loop of intestine incapable of regaining its vitality would be disastrous, while doing an unnecessary resection would also give a tremendous increase in mortality, especially in traumatic injuries, as other organs are frequently injured at the same time, making such a case a very poor surgical risk. So that in a border line case severely shocked it would probably be better not to do a resection.

Wabasse says wounds parallel to the bowel, if they cross one of two large vessels, require resection of the bowel, and that simple suture of wounds of the mesentery is not much called-for be-

cause wounds large enough to require suturing are apt to have done so much damage to the vessels as to demand more radical treatment.

Da Costa says, if branches of the superior mesenteric artery are divided near the bowel, gangrene of the bowel will result, but wounds of a branch far from the intestine does not cause gangrene.* If the wound is found close to the gut the portion of the gut supplied by the cut vessels should be resected.

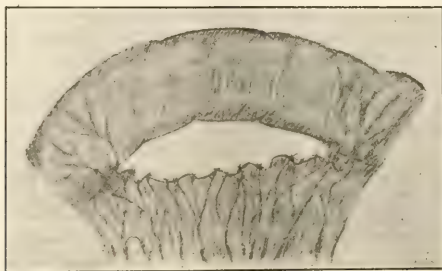
Fowler says that if more than an inch or so of mesentery is torn from an intestine a resection should be done.

Surgical teaching would seem to fix a mesenteric tear of about two inches at its intestinal attachment, as being the border line; that is, greater lengths would require resection while shorter lengths would only require suturing.

The clinical cases that I wish to report, supplemented by some experimental work that I have since done, would tend to show that a much more extensive sacrifice of the blood supply can be tolerated without the necessity of a resection.

CASE REPORTS

White man, age 36, was shot in the abdomen with a .38 caliber pistol, and was admitted to the hospital in a marked state of shock with severe abdominal pain and with general board-like rigidity. A laparotomy was done within three hours of the accident. There was a large quantity of blood in the abdomen. Nine perforations were found, two in the transverse colon, and seven in the small intestine. The perforations were closed in the usual way. The bullet ranged along the mesenteric attachment severing the blood supply to an intestinal loop for four inches. The bleeding vessels were ligated and the mesentery



sutured to the intestine. The omentum was then tucked around this intestinal loop and tacked. No resection was done. A drain was put in. Patient made a good recovery and is now in good health 2 1-2 years after operation.

White man, age 66, dairyman. Was severely gored by a bull July 28, 1921. The abdomen was torn open and a number of coils of small intestine were dragged and forced out of the abdomen. The man was then wallowed about in the farm yard before he could be rescued. A large bath towel was pinned around him to support the extruded intestinal loops, and the patient was taken to St. Peters hospital, where I first saw him several hours after the accident. He was in a marked state of shock with coils of intestine still outside, and there was hemorrhage from the wound. Treatment to combat shock was immediately instituted, followed by operation. There was a large irregular wound 3 1-2x5 inches through the right rectus muscle about the level of the umbilicus. This wound was excised and enlarged whereupon the abdomen was found to have a large quantity of free blood and hemorrhage was still in progress from torn mesenteric vessels. The horn had passed through the base of the mesentery and ranged upward along the aorta stripping off the peritoneum and loosening the head of the pancreas and duode-

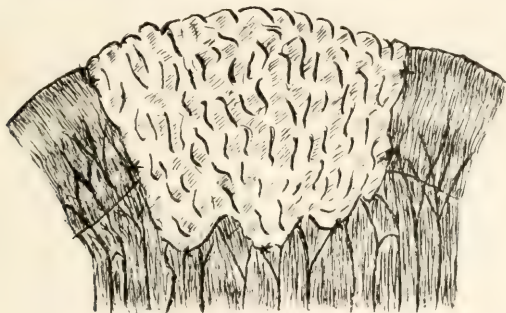
ly sacrificed for 3 1-2 in. The omentum was tacked around the loop, and over the raw mesentery. Patient made a good recovery, and is now in good health, sixteen months after operation.

EXPERIMENTAL WORK

Dog No. 1. Was operated on March 2, 1923. Six inches of mesentery was ligated, and cut away from the intestine, severing all blood supply. (Fig. 1). The mesentery was then sutured to the intestine to close the opening, and omentum was tacked around the damaged loop. (Fig. 2). The dog made a good recovery. Three months later the dog was again operated on to explore the result. It was found that omentum was densely adherent to the intestinal loop, and exceedingly vascular.

Dog No. 2. Was operated on March 5, 1923. Eight inches of mesentery was ligated, and separated, and treated as in dog No. 1. This dog made a good recovery and got away two weeks after operation.

Dog No. 3. Was operated on March 12, 1923. I meant to separate the mesentery for about ten inches, but when the vessels were tied, and the mesentery severed, I found that thirteen inches had been separated. This dog at first vomited more than the others, but apparently made a good recovery, and was able to take all kinds of food. Five weeks after



num. The mesentery was torn loose from the small intestine at its attachment at two different points, one for a distance of three inches and the other for eight inches. After ligating the bleeding vessels (Fig. 1) the mesentery was sutured to the intestine, and the omentum tucked around the long damaged loop and tacked in position (Fig. 2). Owing to the general condition of the patient a resection was not done. For several days following the operation the patient remained in a serious condition, but gradually improved. There was slight drainage from the wound for about ten days. Aside from this the man made an uneventful recovery and left the hospital in about three weeks, and is now in good health three years after operation.

Woman, age 38, had tumor mass completely filling was at first thought to be an ovarian cyst. At operation it proved to be a large mesenteric blood cyst. It the pelvis which could be palpated above pubes. This was attached close to the intestine and in its removal, the blood supply to the intestinal loop was apparent-

ly sacrificed for 3 1-2 in. The omentum was tacked around the loop, and over the raw mesentery. Patient made a good recovery, and is now in good health, sixteen months after operation.

L COMMENT L

At this stage of the clinical and experimental work, I am unable to say where these long loops of intestine freed from their mesenteric blood supply, got sufficient nourishment to survive. The mesenteric vessels near the intes-

tine are said to be terminal and do not anastomose in the intestinal coats. It does not seem plausible that simple suturing of detached mesentery with its ligated vessels back to the intestine would establish blood supply sufficiently early to save the damaged loop. Therefore it would appear that wrapping the omentum around the intestine and suturing it in position (Fig. 1), hastens the formation of plastic adhesions about the loop, thus facilitating the re-establishment of the blood supply. On exploring one of the dogs two months after operation the omentum, mesentery, and the intestine itself were found to be very vascular at this area. Aside from the scientific and clinical interest, the important practical point is that a long loop so treated does survive, making a resection unnecessary. I am not prepared to say that it would always be safe to ignore a loop of intestine separated from its mesentery from 8-10 inches as the clinical and experimental work might tend to show. However in border line cases already severely shocked, I am of the opinion that it would be safer not to do a resection, certainly, where no more than 4 or 5 inches are separated, which is about twice the previously recognized border line. More conservative surgical treatment promises the better result.

CONCLUSIONS

1. This limited clinical and experimental work would tend to show that a much more extensive sacrifice of the blood supply to an intestinal loop can be tolerated, than has heretofore been taught and practiced.

2. It necessarily follows that the number of intestinal resections can be materially reduced with a reduction of mortality, shortening of convalescence and increase in number of complete recoveries.

Fig. 1—Drawing shows mesentery separated from intestinal loop with vessels tied off illustrating condition in clinical cases dealt with; also as produced in experimental cases.

Fig. 2—The mesentery has been sutured back to the intestine and the omentum tacked around the damaged loop and tacked in position as was done in the clinical and experimental cases.

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DISCUSSION

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DR. C. I. ALLEN, Wadesboro: I want to express my appreciation for the excellent and instructive paper that Dr. Bost has presented to us. If further observation shows that he is correct in this, he will have changed one of the basic and fundamental principles of intestinal surgery. A few months ago I had a man with a gunshot wound of abdomen, in which three and one-half inches of the mesentery had been severed. Having heard of Dr. Bost's work, I repaired this injury according to his method and the man made a good recovery. Any man who can dispute a point in anatomy with Gray, and win, and who can change one of the basic and fundamental principles of intestinal surgery as held by the leading surgeons throughout the world, deserves congratulations, and has mine.

DR. R. L. GIBBON, Charlotte: I want to indorse what Dr. Allen says, for I think this paper of Dr. Bost's is a very important one. It certainly is, we might almost say, revolutionary. I have not had the nerve myself to try it; when in doubt I have always resected.

DR. C. S. NORBURN, Asheville: I would like to say a few words about Dr. Bost's paper, which is certainly most interesting.

The omentum is becoming of more and more importance in abdominal surgery. Charlie Mayo has resurrected the Billroth No. 1 from oblivion by using the omentum to tack over the suture line. He also draws an enterostomy tube through a hole in the omentum before bringing it through the abdominal wall, thus preventing leakage at this point. And we now prevent sloughing of the suture line in intestinal anastomosis by wrapping the suture line with omentum.

It seems that it would be very important to determine just what takes place in these operations of Dr. Bost's. Does the omentum keep the devascularized piece of intestine alive, or does the intestine die and become replaced by fibrous tissue? Several cases of severe abdominal injury and of mesen-

teric thrombosis, which I have seen, appear to point to the latter. I remember that in one case the loop of intestine lay in a trough of thick inflamed omentum. When the loops were shelled out of this bed of omentum it was found to be gangrenous for six or more inches, its contents having been retained by the surrounding omentum. Now if this is what really takes place when we wrap the devascularized gut with omentum it would seem that we are trusting to an uncertain process which would at the best leave several inches of scar tissue in the alimentary track. It would seem that if the patient's condition at all warranted it it would be better to resect and wrap the suture line with omentum. On the other hand, if autopsies on dogs showed the loop to remain constantly viable, this procedure may be a most important find.

However, all this may be, it is certain that in cases where the shock is too great to risk a resection, the knowledge of this procedure of wrapping the devascularized loop with omentum is of the greatest value.

DR. OREN MOORE, Charlotte: The question was raised by the essayist as to what caused the death of his dog. I was present at the operation, though I was not called in consultation as an obstetrician, but as an experimental surgeon. I feel certain, however, that the cause of her death was that Dr. Bost had not used Widal's hemoclastic liver test.

I also wish to say, seriously, that Dr. Bost's contribution today strikes me as being the high water mark of today's session in that it is an entirely new principle. No man who has been faced with the alternative of doing a resection or putting back the loop of intestine stripped of mesentery but will be relieved. This will give a great deal of comfort to us—in fact, I shall accept Dr. Bost's dictum.

DR. R. McBRAYER, Shelby: Just a word about Dr. Bost's paper. I hope the day will come when the State Medical Society will help a man like Dr. Bost, by subsidizing such work and then

we will do greater things in a medical way.

DR. BOST, closing the discussion: I wish to thank the gentlemen for their very kind references to me and their liberal discussion.

In answer to the question regarding the formation of contracting scar about the damaged loop, resulting in obstruction: the patients so treated have had no trouble. However, should this occur it could be dealt with at a more opportune time, so this offers no objection to the method.

I am very grateful to Dr. Moore, for accounting for the dog's death, as it shifts the responsibility.

I would say further regarding intestinal resection, if one would look over records in different hospitals and work done by different operators, it would be found that the results would be far from satisfactory. I am unable to say whether this is due to a faulty technique or to the pathology dealt with. Probably both are factors, but I should say the traumatic or pathologic condition for which a resection is usually done, is often a very grave condition itself and when the shock of a resection is superimposed the mortality will be much higher.

I recall that early in the war, the mortality from intra abdominal injuries was so high in the British Military Hospitals that a commission was sent out to investigate it. It was decided that too many resections were being done and they sent out a bulletin urging that resection be avoided wherever possible, and that simple closures of intestinal injuries be done instead, even though it caused considerable narrowing and angulation of the intestine. Following this the results were better and the mortality reduced. Therefore it is desirable, in dealing with mesenteric and intestinal injuries, to resect only in the presence of urgent indications.

I wish to take this opportunity to thanks Drs. L. D. Walker and J. L. Ranson for administering anesthetics and cooperating with me in doing the experimental work.

Disorders of the Thyroid Gland*

S. O. BLACK, M.D., *Spartanburg, S. C.*

The thyroid gland is one of the most important and remarkable organs in the human body. Not only does it have to do with the development of the breasts, the elongation of the bones, and the distribution of the hair, but it also has to do with sexual desire and power, and at the same time it presides over the velocity of cellular activity. Thyroid disorders may be congenital or acquired. Though relatively rare, congenital goiters are not infrequently overlooked by the attending physician or obstetrician.

There are four varieties of congenital goiters; a. vascular, b. cystic, c. colloid, and d. parenchymatous. The cystic is the least frequent; the parenchymatous the most frequent. The vascular type results as a rule from the long labor incident to face presentation. Parenchymatous goiter is preventable, provided the mother gets sufficient iodine while she is carrying the fetus in utero. If the gland is of size sufficient to interfere with respiration, the isthmus may have to be divided, or intra-tracheal intubation performed. The acquired goiter is more frequent than the congenital. It may be simple, toxic or malignant. Lues occasionally reveals itself in the thyroid gland as a parenchymatous enlargement during the eruptive stage, or later as a true gumma. There have been reported but about 30 true gummas. Two of these occurred in children with congenital syphilis. A gumma may be large or small, in the isthmus or in the lobe. It is hard, nodular and early produces cough and dyspnea. Frequently it is difficult to clinically differentiate from malignancy. When present as a mass in the thyroid gland with a positive blood Wassermann, the therapeutic test should be tried.

The cause of variation in the function of the thyroid gland is not known. It is more frequent in the female than in

the male. It is 15 times more prevalent in the northwestern states than in the southeastern. Fish and oysters are rich in iodine, as is the air along the coast lines; hence goiter is comparatively rare near the sea. Normal thyroids contain at least one-tenth of 1 per cent of iodine. Adenomatous goiter contains an excessive amount of iodine. Many children with enlarged thyroids are in need of iodine. An expectant mother developing parenchymatous thyroid enlargement should be given an iodine salt at regular intervals to prevent the development of a goiter in herself, as well as to prevent her offspring from being a dullard or a cretin.

Cameron and Mix state that the adrenal and thyroid are physiologically related, the former acting as a whip. They each affect the pulse rate, the pulse pressure and the respiration. The adrenal spurs the thyroid to greater activities in periods of stress and strain. The bearer of an overacting thyroid moves with a quick, jerky motion, is emotional, easily frightened and highly nervous. The heart sounds are quick and snappy; the pulse rate and pressure are increased; tissue metabolism is hurried; there is flushing of the face and the body and usually a loss of weight and strength. Should there be too little glandular secretion, cellular metabolism is delayed, the patient takes on weight, the skin becomes thick, the hair dry and brittle, the mental apparatus lags, and the patient not infrequently becomes, sooner or later, a recluse.

It is plain, therefore, that the thyroid gland plays a varied role and presides over many of the important functions of the human body. It is the carburetor to the human machine. Should the composition of its finished product of secretion in any way be altered, the function of the gland itself would of necessity be changed. Often-times the symptomatology of hyperthyroidism constitutes a problem for the internist, the psychiatrist, and the surgeon. It

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frequently simulates tuberculosis, psychosis, neurasthenia, organic heart disease and paroxysmal tachycardia.

Running along with the superior thyroid vessels into the pole of the gland itself are innumerable tiny nerve fibers; whose function it is to carry sympathetic impulses. There are but very few of these nerves with the inferior vessels. Mastin believes that to interrupt these impulses by means of ligation operation is to improve the patient. Polar ligation in our experience has no advantage over arterial ligation. The thyroid has a dual blood supply. The principal one is through the four cardinal vessels which run along beneath the capsule and anastomose freely; the lesser, an indirect supply, which occurs through the trachea and esophagus.

As cystic and adenomatous goiters tend to become toxic or malignant they should be removed. The non-hyperplastic toxic goiter should be removed before irreparable cardiac damage has been done. There are a goodly number of these cases whose cardiaes have been so damaged as to prohibit surgical interference, yet we have had very gratifying results through x-ray therapy.

There are many cases of mild hyperthyroidism easily benefitted, and not infrequently cured, by simply removing foci of infection. Abscessed teeth, diseased tonsils and infected sinuses are all known to have caused a disturbance in the function of the gland. Where no local infection can be found, the administration of iodine often results in marked improvement. In fact it has been found that the administration of this drug often is of efficiency comparable with ligation. The metabolic rate drops, the pulse rate decreases, nausea subsides, strength is restored, nervousness is lessened and in general the patients state that they feel better. In our experience ligation and iodine solution reduce the rate, insure rapid improvement and put the patient in condition for thyroidectomy far sooner than any other known procedure. The safest, quickest and surest way to cure toxic goiter of a hyperplastic nature is by surgery. The present mortality for

exophthalmic goiter in experienced hands is less than two per cent. The post-operative care of exophthalmic patients is of importance equal to the pre-operative care. It consists of rest, fluid, and heart and nerve control. After leaving the hospital they should be free of household duties and cares, should remain away from church and social gatherings, and should spend several hours at least each day in bed.

Of our last 180 consecutive goiter patients, 116 were diagnosed adenomas, cyst-adenomas or adenomas with colloid retention; twenty-two were unquestionably thyro-toxic; thirty-two were either exophthalmic or cases of distinct hyperthyroidism, and the remaining seven were adolescent goiters. Of the last 110 consecutive goiters operated by ourselves four succumbed. Of this number, two were thyro-toxic and two were exophthalmic. In both of the latter death following simple ligation, and occurred before we began the use of Lugol's solution.

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THE INDICATIONS AND TECHNIQUE FOR REMOVAL OF EXCESSIVE SUBCUTANEOUS ABDOMINAL FAT

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The profession is not sufficiently acquainted with the benefits, cosmetic and physical, that can be secured by the operative removal of large masses of subcutaneous abdominal fat. Fatty pendulous abdominal walls have been looked upon as natural, as irremediable and therefore have received but very little study. It has however been re-

peatedly and amply demonstrated that superfluous masses of subcutaneous abdominal fat can, with safety and with advantage to the patient, be removed by operation.

The essential anatomic characteristic of the morbid entity herein discussed is the pathological accumulation of fat in the subcutaneous cellular tissue of the abdominal wall. In all these cases the abdomen shows a symmetric, at times an enormous, increase in volume. The fat excess is present mainly in the lower, anterior and lateral infra-umbilical portions of the abdominal wall. This superfluous local fat deposit is usually, though not always, a part of general obesity. It may or may not co-exist with other, related or non-related, pathological changes in the abdominal cavity, contents or walls.

It is a condition incident to adult life. Excessive localization of fat in the abdominal wall is infrequent in men, but is not of uncommon occurrence in the female. Flabby and sagging abdominal walls overloaded with fat are met more commonly in individuals who since early life have been corpulent; the most pronounced forms, however, are seen in multiparae. It also occurs in nulliparae.

Redundant fatty abdominal walls, if uncomplicated, give few symptoms. These symptoms, however, both subjective and objective, are characteristic, are conclusive. All the objective symptoms are demonstrable either to inspection or by palpation. At first, pain and disability are slight. The condition progressing, they and the other associated symptoms increase in severity.

Pain is influenced by posture and is more marked with the patient in the erect posture. The pain is increased by all forms of exercise. It is lessened and in some cases disappears with rest in the recumbent posture. It often has the nature of a painful, dragging sensation, and is lumbar, inguinal and hypogastric in location. These patients are inactive; they become averse to all effort, there results a vicious circle for the increased inactivity leads to in-

crease of the local and general adiposity. In women who near the menopause take on adipose, there not uncommonly forms a huge, pendulous roll of fat across the lower abdomen, below the umbilicus. This pendent fat-mass creates a crease, often madid and eczematous, located just above the symphysis pubis. In most patients, the continuous contact and friction of the inferior cutaneous surface of this fat apron and the underlying regions determine an erythema, an eczema, an excoriation, an elephantiasis of the skin of lower abdomen, of the inguinal folds and in some cases of the upper part of thighs. Some patients present two distinct creases. All the subcutaneous tissues of the hypogastric and iliac regions take part in the formation of these folds which extend transversely from one lumbo-iliac region to the other and which vary in length and thickness. In the recumbent posture, the flabby fatty mass gravitates to either side and sags over the iliac spines and crests. The prolapsed tissues show impaired tonicity, impaired resistance.

This excessive fat-deposit hangs apron-like over the external genitalia and the upper portion of the thighs and may overlap the upper two-thirds of the thighs.

Other subjective symptoms and objective signs are enumerated in conjunction with the indications for operation.

Pendulous fatty abdomen must be differentiated from diastasis of the recti abdominalis, with which it is, at times, associated. When it is suspected that the recti abdominalis muscles are abnormally separated, it is better that the examination be conducted with the patient in the recumbent posture. The patient reclining is told to elevate the head as much as possible without the help of the arms. If the diagnosis be positive, this maneuver separates the inner borders of the two recti muscles from one another, causes a greater or lesser prolapse of the intestine through the gap and enables the examining hand to easily depress the superficial abdominal coverings into the abdominal cavity.

The careful clinician will not overlook or misdiagnose hernias (umbilical, inguinal, ventral, etc.) They frequently co-exist with pendulous abdomen. Their anatomical location and clinical characteristics are suggestive. Hernias give an impulse on coughing and often do not present the same volume; if intestinal, they give a tympanitic note on percussion. If no hernia be present, if there be no abnormal separation of the abdominal recti muscles, the fat mass can be raised easily from, and made to glide somewhat upon, the underlying resistant muscular wall.

In properly selected cases, large masses of fat can be removed from flabby, sagging, fatty abdominal walls when the excessive fat deposit—

(1.) causes great annoyance and discomfort, as

- (a.) pain (at site),
- (b.) backache,
- (c.) dyspnoea on moderate exertion—ascending stairs, walking, bending,
- (d.) distressing irritation,—inflammation of the skin, erythema, intertigo, chronic inguinal excoriation, eczema,

(e.) pouch-like overhanging of a cumbersome, useless, fatty apron in front of the upper portion of the thighs,

(f.) undue fatigue and painful dragging sensation from the weight of the mass;

(2.) determines manifest disability, by

- (a.) interference with locomotion,
- (b.) interference with marital relations,
- (c.) interference with the exercise of one's calling;

(3.) constitutes a physical handicap, producing

(a.) inability to comfortably, to gracefully assume the erect posture; waddling gait,

(b.) inability to attend to the toilet of the lower part of the body;

(4.) becomes an unbearable social handicap; patient is unwieldy, unsightly, incapacitated for recreation, not sick, not well.

Resection of large masses of subcutaneous abdominal fat is also justifiable and most serviceable:

(1.) in the obese, to lessen the tendency to hernia formation;

(2.) in operating for hernia in obese individuals, so as to obtain better exposure of hernial rings and hernial regions;

(3.) as an associated, supplementary and terminal step to many abdominal operations: hysterectomy, ovariectomy, cholecystostomy and cholecystectomy, appendectomy, uterine prolapse and retroflexio uteri;

(4.) as a preliminary step to many abdominal operations so as to facilitate intra-abdominal work: a small fibroid in an atrophic uterus, a retro-cecal appendix, a small gall-bladder tucked away in a deep fossa with a stone in the cystic duct or, still worse, a stone in the common duct;

(5.) in cases in which the careful fitting and wearing of an orthopedic apparatus is not otherwise feasible.

The benefits secured from massive resection of superfluous subcutaneous abdominal fat are so evident, so manifest; and the dangers attending the operation are so negligible, that even in the absence of any other pathological process calling for an abdominal operation, the surgeon should not hesitate to advise and to urge the excision of these useless, troublesome and cumbersome fat accumulations.

The risks of simple lipectomy, either performed alone or in conjunction with other operative procedures, are far outweighed by its beneficent results. It has been successfully performed at the same sitting with operations for the cure of hernia (umbilical, inguinal, ventral, epigastric, incisional), appendiceal, gall-bladder and uterine disease.

In simply lipectomy, the operative procedure is limited to the massive retrenchment of redundant subcutaneous abdominal fat and overlying skin. The incisions extend through the skin and fat, down to the fascia, and not beyond.

Lipectomy may also either precede or follow, but always at the same operative sitting, surgical steps for the cure of hernia (umbilical, epigastric, ventral, incisional), for the cure of uterine dis-

placements and uterine diseases (fibroid, prolapse), for the cure of appendiceal and gall-bladder disease, and for diastasis of the recti abdominalis muscles.

Lipectomy has also been performed to facilitate intra-abdominal work by making intra-abdominal organs more accessible, and to assure a better adjustment of orthopedic appliances.

Different operative procedures are employed for the cure of the condition under consideration, each operator being partial to the method which has given him the most satisfactory results. Whatever technique be used;—and it must always be adapted to the case at hand;—it is all important that the integrity of the abdominal muscles, fasciae and peritoneal fat be fully respected. Only the skin and fatty mass immediately subjacent to it and directly in front of the fascia are to be removed.

The operation which we perform and recommend is entirely different from that performed by Creveling and others, who, to restore the abdomen to normal size and contour, carry their incisions through the entire thickness of the abdominal wall into the peritoneal cavity. Bear in mind that we are not considering here prolapsus of all the abdominal coverings. We are only discussing the removal of excessive subcutaneous fat accumulations.

The completeness of the fat-removal is a measure of the freedom from fat thereafter of the part operated. Enough fat should be removed to completely eliminate soreness from chafing. It has been our practice to remove the mass in one or two pieces.

After having performed several lipectomies, the surgeon experiences little difficulty in deciding how much fat it is judicious to remove. The removal of one large wedge-shaped fat-block, occasionally two, rarely three, usually suffices. As the patient lies in the recumbent position, the fatty mass gravitates to the sides and can be picked up, can be lifted up as a great ridge or fold lying across the abdomen. The operator grasping this mass in the center, pulls it up and away from the body and

circumscribes it by two incisions, one passing a little above and the other a little below the lines of deflection.

It is preferable that the incisions be clean-cut, made with one or several long sweeps of a broad-blade scalpel or short amputation knife. The length of the incisions has little appreciable influence on the outcome of the operation. Pat-tern by slicing is bad practice. Small hacking cuts are to be condemned. The smoother the fat surface, the better the approximation. Two initial incisions usually fulfill all requirements. These two incisions converge into one upon the fascial layer, thus no undermined surfaces, no pouches for the accumulation of wound secretions are left. Sufficient skin must be left for approximation. Let there be no undermining of the wound edges.

In selecting incisions, we are guided as to length, type and location by various factors: such as, the existence or absence of complicating conditions, the nature of the other indicated operative steps, the amount of fat to be removed, and the patient's general condition. For the excision of large wedge-shaped fat-blocks, we have adopted and recommended two transverse elliptical incisions, beginning well over on one side and extending to corresponding points on the opposite side. These two incisions converge toward the fascial layer. Many other operators follow the same practice. If an abdominal section is to be performed at the same sitting, the fat is first removed by means of a double transverse incision. This having been done, one proceeds to enter the abdominal cavity by a vertical incision through the rest of the abdominal wall.

Transverse incisions have the disadvantage of increasing the already large waist measure and of leaving at each end of the wound an unsightly projection. To avoid these, I remove a small vertical ellipse of skin near each end of the transverse incisions. If transverse incisions be used, the approximation and the apposition of the flaps is effected more easily, the liability to post-operative separation of the wound-edges is minimal, primary union is frequent,

delayed healing is rare and long-delayed cicatrization is very uncommon.

Longitudinal incisions found favor with few clinicians. Though multiple incisions, patterning by slicing, hacking cuts, undermining of wound-edges, excision of vertical fat-blocks are not conducive to the most aesthetic and satisfactory results, they have been practiced by some.

Fat is a tissue of low vitality and special care must be taken that there be little or no accumulation of serous or sero-sanguineous fluid between or beneath the flaps. Retained wound secretions retard healing, invite infection. A drain is inserted at either end of the wound; if the wound be long, one may also be inserted at its center. Closure is effected by approximation sutures of silk-worm-gut. For the exact apposition of the wound-edges, we use linen. In these cases, I frequently advise the application of hot boric acid compresses to the operative wound for from two to three days; these fomentations are to be renewed every four hours. The drains are removed as soon as the discharge warrants it and the patient is kept in bed for about fifteen days. The result of the closure should be a smooth abdomen with a linear scar and without any hanging folds. Some patients during the first few post-operative days complain of abdominal tightness, of abdominal constriction. It calls for no special treatment.

Summary

In suitably selected cases, the operative removal from the abdominal wall of large wedge-shaped masses of subcutaneous fat has the following advantages:

1. It is a safe and invariably beneficial surgical procedure. It has always been performed under general surgical anesthesia; never under local or spinal anesthesia.

2. It is always devoid of immediate or remote dangers to the patient; though the wound be extensive, the hemorrhage is moderate and healing is good.

3. It is simple of execution and, if

unassociated with another operative procedure, the technique is easy and the performance of the operation does not consume much time. It is all important that the incisions be carried to but not beyond the fascia.

4. It may be the only operation indicated and performed in the case at hand.

5. It is, at times, called for as a preliminary operative step to facilitate intra-abdominal work and to give better access to intra-abdominal organs.

6. It is not infrequently employed in conjunction with other operations. The operator retrenches an unwieldy, useless, pendent mass of subcutaneous abdominal fat and at the same sitting brings relief to, or corrects, co-existing pathological abdominal conditions.

7. It eliminates a physical handicap, effects a marked improvement in the patient's appearance and general well-being and procures complete relief from the unsightly, painful and disabling deformity.

8. It gives permanent results, if post-operative instructions regarding diet and exercise are followed.

9. It secures the following benefits:

- a. Diminution in weight.

- b. Freedom from discomfort, local and general, and from the disability incident to cumbersome, burdensome, pendulous fatty abdomen.

- c. Improvement in the patient's general appearance, the hippopotomal abdominal wall being converted into a straight front. Improvement in pose: body is no longer awkwardly balanced and gait ceases to be waddling. Patient is enabled to resume his or her occupation.

- d. The patient, after its performance, can occupy a more normal, more natural and more useful relation to society.

- e. The patient can be more active, can give his body more personal attention, can give his or her work the necessary attention and necessary application.

A FURTHER STUDY OF THE REMOVAL OF URETERAL STONE BY CYSTOSCOPIC MANIPULATION*

A. J. Crowell, M.D.,
Charlotte

At the Montreal meeting of the American Urological Association, 1921, we reported 98 cases of impacted ureteral stone treated by ureteral anesthesia and ureteral dilatation. Our conclusions at that time were as follows:

1. Practically all recently impacted ureteral calculi, in the normal ureter, can be removed by cystoscopic methods under local ureteral anesthesia with less fatalities and less injury to the kidney function than that obtained following surgical procedures.

2. The success of the method depends upon the greatest ureteral anesthesia and ureteral dilatation possible, the skill of the operator, and persistence in his manipulation.

3. An effort should first be made to remove the stone by this method. No harm is done the patient by so doing and surgery can be resorted to at any time necessary.

4. Much time and suffering is saved the patient and a return of the stone less liable to occur following this plan of procedure than that following surgery.

These conclusions are as applicable today as they were then. I know full well how easy it is for one to become unduly enthusiastic over an idea or a surgical procedure perfected by himself and, until a sufficient number of cases had been treated in order that sentiment might subside and due deliberation prevail, I have purposely had little to say on this subject. Time and experience have not changed our enthusiasm for the method or altered our technique materially.

Local anesthetics have been in use for many years but not extensively in ureteral anesthesia for cystoscopic manipulations until recently (1915). We found that ureteral anesthesia not only enabled us to pass a catheter by an impacted stone, which otherwise would have been impossible, but also inhibited

ureteral spasm so as to allow the stone to pass into the bladder, in many cases, shortly after the removal of the retention catheter. This is especially true if the ureter be thoroughly anesthetized and the kidney pelvis filled with warm sterile saline solution before the catheter is withdrawn. It is well also to inject warm sterile oil during the latter procedure.

The method is fully described in our Montreal paper and since there has been no special change in it, we will omit its technique in this paper. We probably give a little more time between treatments now and are more careful to leave the catheter in for several days (1 to 3) after first successfully passing the catheter by the stone. If kidney infection is a complication, this procedure gives kidney drainage and prevents permanent kidney damage by infection or pressure atrophy. Retention catheter drainage for several days will dilate the ureter so as to make drainage around the stone ample for at least several days after the catheter's removal. In fact, this gives such complete relief that it is often difficult to convince the patient of the importance of follow-up treatment until the stone is recovered.

The only thing we especially wish to emphasize with regard to the technique is the importance of thoroughly anesthetizing the ureter when the catheter meets with obstruction, before making any special effort to force the catheter by the stone. With proper care a 5 per cent solution of novocaine may be used for this purpose with perfect safety. If such precautions are taken, one seldom fails to get by the stone. If the catheter fails to pass in a first attempt, the manipulations alone may move the stone or change its axis so as to make a second attempt easily successful. While we have not done so we keep promising ourselves to use the fluoroscope in these manipulations. It would be of great advantage and especially in our efforts to grasp the stone for removal with the Bransford Lewis forceps.

Pain in ureteral stone impaction is largely due to intra-pelvic pressure and especially if associated with infection.

*Read before the 27th Annual Meeting of the Tri-State Medical Association, February 18-19, 1925.

The symptoms rapidly subside when the catheter is successfully introduced past the stone. The catheter gives instant relief, affords a means of pelvic lavage, and the kidney's function is quickly restored. If the infection is of recent occurrence, with catheter drainage, it will seldom be necessary to sacrifice the kidney, even in the presence of virulent infection.

Of course, there are certain conditions in which the method is not applicable; such as, double pelvis with Y ureter or where the ureter has been completely blocked sufficiently long to produce kidney atrophy or destruction of its function by infection. When complicated with nephritic stone and infection, requiring pyelotomy, the stone should be removed from the ureter through the pelvic opening or by extending the incision downward and doing a uretero-lithotomy. The method cannot easily be used in children or men with enlarged prostates, bladder tumors, vesical stone, diverticulæ, etc., where ureter catheterization is impractical. Of course there are a few very large ureteral stones of long standing in which uretero-lithotomy is preferable; but we believe that 95 per cent of the **recently** impacted ones can be removed by this method with less fatalities and less injury to the kidney's function than that following major surgical procedure.

Regardless of the theory of some men that many stones form in the ureter, we still believe that they are of kidney origin and largely associated with kidney infection. Pelvic lavage in such cases, to remove infection and debris, is very important to prevent stone reformation.

Fatalities following the removal of ureteral stone by cystoscopic manipulations are unnecessary if ordinary precautions are observed in our technique. If we are to judge from the reports of those who depend largely upon major surgery for the removal of ureteral stone, such assertions cannot be made by them. Their fatalities range from 1-2 per cent to 20 per cent. Judd reported sometime since, 400 such operations with only two deaths, but did fifty nephrectomies in the series. In the

hands of the less skilled, a far greater percentage of fatalities have occurred to say nothing of such complications as stricture, fistulæ, etc.

Of the 298 cases treated at our clinic for the removal of ureteral stone since we began this work in February, 1915, there has not been a single fatality. Four nephrectomies, 9 uretero-lithotomies and 8 pyelotomies were performed for the relief of ureteral stone impaction. In analyzing the 200 cases coming under our care since April 1, 1921, calculi were found in the left ureter in 123, in the right in 71 and bilateral in 6 cases. Infection was a constant complication if the impaction had persisted for a great length of time or intervened to some extent if it was necessary to persist in our manipulations for an unusually prolonged period of time. The latter, however, was easily controlled by pelvic lavage where kidney drainage was obtained.

The average length of time the patients were under our care until the stone was recovered was sixteen and one-half days. You understand that many of these patients lived in the city and vicinity and came in occasionally for treatment following the immediate relief obtained by ureteral dilatation until the stone was recovered. In such cases the treatment was not pushed. This naturally would increase the average length of time these cases were under treatment. Many of them went on with their work most of the time without undue suffering. Some were physicians, looking after the suffering of others. This would not have been possible had they been operated upon.

In conclusion, I repeat that the simplicity and safety of the method is evident. It is simple, in that any one reasonably skilled in cystoscopy, can do the work in his office or at the hospital with perfect safety and without a general anesthetic or marked suffering on the part of the patient. It is safe because no trauma of consequence is produced.

This report represents work done at our clinic by Doctors Thompson, McKay, Todd, Squires and myself and I desire to give them, in this way, due credit.

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Harmless Codeine vs. Harmful Morphine

Morphine addiction is a subject of the first importance to doctors at all times. Just now especial attention is directed to this malady by the trials in progress in the Federal Court sitting in this city of a number of purveyors of the drug, among these being two physicians and one dentist.

For the addict who takes part in this nefarious traffic in order to supply himself with the means of appeasing his overpowering craving, every man of humane impulses must feel the most profound sympathy. For the professional man, in whom confidence is reposed, and to whom the afflicted and diseased must, of necessity, apply,—when he violates this confidence and advantages himself of this necessity for the gratification of his greed, there should be punishment, swift, certain and severe.

The man who deliberately makes of another a slave to the morphine habit is a far more dangerous and despicable criminal than the cowardly assassin who kills from ambush. The latter, with little or no infliction of pain, deprives his victim of his life. The former condemns him to a life of ignominy,

and, usually, infamy, brings his family to want and humiliation, and creates a new focus from which this pestilence is to spread, in its ever-widening circles of destruction. No moral appeal has any weight with a criminal of this class. He must be placed where he is powerless to continue in his blasting course. In this way only can the *de-liberate* enslavement of patients be prevented.

But there is another phase of the subject which presents features entirely different. Many become addicted to the use of morphine through no design on the part of any one, the physician administering the drug because he judges the condition of the patient to demand a powerful analgesic, and that morphine only will serve the purpose. He may go a bit further and include in his reasoning "or some other dope or opiate."

"Dope" may be dismissed with a sentence. Since it is used to indicate a dozen things ranging from information to cocaine, only a mental gymnast can grasp whatever idea (or lack of idea) it is intended to convey. With the doctor who says he uses morphine because his choice is restricted to this drug or some other opiate there is some hope of dealing as a rational being. We may be able to convince him that all derivatives of opium are not menaces; that one of them, at least, although showing itself of marked potency for good, has been convicted of no more serious crime than coming of criminal stock.

Let us first rid our minds of the idea that no harmless thing can come out of Nazareth, and then consider the case of *Codeine* on its merits. Although it has been known nearly as long as morphine, so far as we have been able to ascertain by wide reading and diligent inquiry, *no case of true codeine addiction has been reported.*

A letter from the office of the Surgeon General of the U. S. Public Health Service under date of March 20, says: "The results of some studies made by the Public Health Service confirm the opinion expressed in your letter, that codeine addiction is rare, and seems to indicate that *codeine possesses in only*

a slight degree, if at all, the property of creating a physical need for the drug such as produces the symptoms of morphine addiction."

A booklet kindly supplied by the Hon. Stephen G. Porter, who recently represented the United States at the Geneva Conference contains the gist of the agreements at the "International Opium Convention" at The Hague, 1912; "Suggestions by the Advisory Committee of The League of Nations," 1924; and "Suggestions of the United States of America."

Much is said about morphine, heroin and cocaine, but not one word about codeine. In only one place is anything said which might possibly be so construed—"every other alkaloid of opium which may be shown by scientific research, generally recognized, to be liable to similar abuse and productive of like ill-effects."

Clearly codeine, despite its suspicious parentage, has not only not been convicted, but, on the other hand, has established its innocence.

Naturally, one asks;—why is codeine listed with morphine, heroin and cocaine in the Harrison Anti-Narcotic law? And echo answers,—Why?

The question may be readily and reasonably extended to include apomorphine and Dover's powder. What process of reasoning led to the conclusion that the former,—the very threat of which pales the face of the most rubicund alcoholic, once he has experienced its retchings,—could ever be *desired* is beyond ordinary comprehension; and that blood-thirsty old pirate, Thomas Dover, would be amazed to learn that even the most perverted appetite would *crave* ipecac as an admixture for opium. Such provisions of the law tend to show that law-makers have the same propensities as in the days of the astute Mr. Bumble.

Another natural question, entitled to answer is;—why is morphine so much more used? To answer;—it is cheaper, more soluble, more concentrated, will give relief in a *few* conditions which codeine will not readily affect, *will produce positive pleasurable effects, and—*

many doctors, because of codeine being classed as a habit-forming drug and so equally as difficult to obtain as morphine, decide that they may as well give one of the Sons of Opium as the other.

Some will say they have tried codeine in, for instance, such painful affections as dysmenorrhea, and have been disappointed in the results. In most such cases the dosage was woefully inadequate. A quarter grain of codeine will not bring the same degree of relief from pain as a quarter grain of morphine; but two or three grains will answer the purpose very well indeed. Is this too much? Hare (Practical Therapeutics, 1925) says that in diabetes "twenty to thirty grains or more may be given daily." We have had no experience with such dosage, but there is a wide margin between this and the ordinary pop-gun shots of a quarter or half grain every two to four hours.

Codeine is effective by mouth; therefore, could it be readily obtained, it would be administered in anticipation of pains which recur periodically, thus saving the patient suffering and expense, and the doctor the temptation to give a hypodermic injection of morphine in order to get away promptly. If a prescription is given for this kind of usage the patient soon learns that it contains some ingredient classed by the Law as habit-forming. If he be of a certain type, he will immediately take an inventory of himself after each dose in order to determine the nature of this forbidden pleasure and to revel in it to its fullest. If of the type prone to phobias, or that which affords us our posing martyrs,—(MacSweeney, for example), the patient will promptly refuse to take the prescribed drug.

Remove codeine from the list coming under the restrictions of the Harrison law, where it is damned because of the evil company it keeps through no fault of its own. Thus will be emphasized at all times the wide gulf between the two chief alkaloids of opium, so that physician, patient and druggist will soon cease to *think* of the two as having any qualities in common save those of a beneficent nature. The increase in

the use of the harmless will diminish that of the harmful. It is entirely possible that this reduction would soon bring the legitimate sale of morphine down to so small a quantity that only one or two drug stores in a city could handle it profitably. This concentration would make for more efficient supervision. Opium produced in different Eastern countries varies greatly in morphine content (the basis of value), the range of percentages being from five to twenty-five. With the greater demand for codeine, poppy planters would choose plants producing opium yielding a high percentage of codeine rather than morphine, or more of the morphine would be synthetically converted into codeine. In this way we would be working hand-in-hand with all the organizations seeking to abolish the Morphine, Heroin and Cocaine Evil.

It is not anticipated that adoption of this suggestion would do away with drug addiction: it is confidently believed that it would markedly diminish it, and, at the same time contribute largely to relief of suffering in these United States.

Dr. W. S. Rankin—Dr. Wm. deB. MacNider

In the honoring of two of our foremost members the medical men of North Carolina rejoice.

Dr. Rankin's work as Secretary of the State Board of Health has had as much to do with the material and educational progress of the State as any one of the factors which are being credited with this result. His effective enforcement of the laws of the State relating to health subjects was a matter for marveling and tardy emulation in other commonwealths. Not even the good roads of the State have given it more favorable publicity, nationally and inter-nationally, than the wonderful record of our Secretary of State for Health. We congratulate the Duke Foundation on its acquisition of the services of Dr. Rankin, and the needy sick of the State on this insurance of wise

provision for their care.

Dr. MacNider is now Physician-in-Chief to the Peter Bent Brigham Hospital, one of the teaching hospitals of Harvard. Fortunately for us this is only a temporary appointment. The arrangement is an unusually felicitous one: honor is paid to one we delight to honor and to see honored, and then he returns to us. Having exchanged ideas with Boston's best; having given that part of the world an opportunity to see the principles developed in his investigative work put into clinical operation, and having delivered some lectures in his easy, engaging manner; he will come back without a trace of accent to make you suspect he had ever been in range of a bean or a cod.

It is somewhat singular that these, our two most outstanding medical men, should attain to new honors co-incidentally. We are proud of and for them.

Dentists and Doctors

The address of Dr. Harrison in this issue represents a step in the settled policy of this journal to bring about the closest possible co-operation between dentists and other doctors.

Perusal of the address will call attention to the various ways in which closer relations would redound to the advantage of the patient.

Dr. H. O. Lineberger, president-elect of the North Carolina Dental Association, was present at this joint meeting and pledged his enthusiastic support to the programme. His executive ability and wide popularity in his profession brings to the movement a large element of strength.

There is no dental journal published in North Carolina. It seems evident that the publication of the proceedings of the State Dental Society in the only medical journal in the State would be a long step toward the realization of the plan to bring about real union of these two great divisions of practitioners of the healing art.

DEPARTMENTS

Dentistry

W. M. ROBEY, D.D.S., *Editor*
Charlotte

Better Health Service Through Closer Cooperation Between Dentist and Physician

1. The separation of dentistry from medicine has resulted in a tendency for the dentist to lose sight of general pathologic conditions and for the physician to fail to be on the alert for dental diseases.

2. The Physician is urged to make an examination of the teeth a part of his routine and, whenever suspicious teeth are found, to request the opinion of a dentist. Furthermore, he should realize that he is not trained nor expected to give final advice about the teeth without consultation with a dentist.

3. The dentist, when consulted in this manner, should give a careful, conscientious opinion as to the presence both of actual disease and of possible infection. He also should not hesitate to condemn his own work, should it be necessary.

4. The physician should urge dental care whenever the mouth is found in an unhygienic condition.

5. The dentist will promote his patient's health by suggesting a medical examination whenever systemic disease is suspected. He can also be a powerful influence in advising his patients against the charlatans of medicine.

6. When extensive conservative dentistry is to be done, the dentist should first determine the general health of his patient.

Such cooperation as is here outlined will result in better dentistry, better medicine and, inevitably, in better health for the patient.

—Summarized from Theodore L. Squire, B.S., M.D., *Journal American Dental Association*, March, 1925.

Mental and Nervous

JAMES K. HALL, M.D., *Editor*
Richmond

The American Psychiatric Association

Clarence Darrow, the eminent lawyer of Chicago, whose name is familiar to most reading people in the United States on account of his defense of Leopold and Loeb, will deliver the annual address before the American Psychiatric Association at its eighty-first annual session in Richmond on May 13. But long before that famous recent case in Chicago Mr. Darrow was known as a very able criminal lawyer, who was interested not only in the philosophy of law, but also in the psychology or psychiatry underlying the commission of much crime.

The address of the eminent attorney will be delivered in the city auditorium, and it will be open to the public. A formal invitation will be extended to the members of the Bar Association of Virginia and North Carolina. There is little likelihood that Mr. Darrow will speak to a single unoccupied seat in that great auditorium.

There is an enormous increase in crime. Just as war is the most expensive feature of the contact of nation with nation, in like manner crime is the most expensive manifestation of the reaction between the individual and his government. Investigation would probably establish the correctness of that statement. It is necessary, therefore, that crime be investigated thoroughly, dispassionately, scientifically, and from every conceivable point of view.

Much of human conduct that was formerly looked upon as lawful and proper has been made by statutory enactment illegal and immoral. This statement finds illustration in the attitude of government to the use of alcoholic preparations and to the use of certain drugs. There are almost myriad instances

which might be cited in which government, national, state or municipal, has invaded individual conduct in an effort to modify or control it. The earth's habitable countries are largely filled up; few of them remain in the control of savages, from whom they might be wrested. The consequence is that the individual who finds himself out of sympathy with the law under which he is living cannot go away to some new country, as many of our ancestors did, and establish a government to suit himself. Such individuals, unable to escape by emigration what they think of as the tyranny of law, actually become violators of the law. The thought finds constant residence in my mind that too many laws are being enacted and that the tyranny of the law is being resented by many good people. It is bad psychology and bad statesmanship to attempt to change in radical fashion long-standing customs of the people by legislative enactment, religious appeals, or otherwise. The time of the federal courts is being consumed in attention to cases that should be settled in a magisterial investigation. It is a mistake for the Great Father at Washington to stoop down into observation too minute of the doings of his children. It is undignified. It is paternally unnatural.

There must be in many communities a certain number of individuals who have disregard for the wishes of others—such folks must be inherently mean and criminally inclined.

There are certainly a number, perhaps a large number, of persons who are incapable of that degree of adjustment that enables them to fit comfortably and efficiently into the social structure—these are the mentally unbalanced or the mentally undeveloped. The disability may arise out of ignorance—most human trouble have that origin—lack of moral sense, mental disease, or inherent lack of mental capacity. It is the business of modern science to get at the cause or the causes of individual maladjustment.

The American Psychiatric Association, now more than eighty years old,

is composed of the leading specialists in mental diseases in Canada and in the United States. These doctors are engaged in the attempt to understand human behavior, normal and abnormal. We are all in need of being taught that so called conduct, good or bad, is only the motor exhibition of a state of mind, and that the important thing is not the behavior, but the mental state out of which the behavior arises. Courts pay attention to behavior, doctors pay attention to mental states. Law and medicine ought to have a better mutual understanding of human beings. Mr. Darrow's address will illuminate the bearing that mental disorder has on crime. Everybody within reach should hear him.

All the rest of the program of the Psychiatric Association will be interesting and informative. All the doctors within reach of Richmond should hear the papers read and discussed.

"The proper study of mankind is man."

Eye, Ear, Nose and Throat

HENRY L. SLOAN, M.D., *Editor*
Charlotte

Papilledema

Von Graefe first described "choked disc" (papilledema) in 1860. A very acute interest has been stimulated in recent years by a communication on this subject by Dr. Harvey Cushing of Boston. Cushing says: "Only intracranial tension can produce choked discs. I am exceedingly doubtful whether inflammation of the sinuses can cause this symptom. A retrobulbar neuritis does not produce swelling of the never head.

"A choked disc is due to mechanical, not to inflammatory, causes, and optic neuritis is a misnomer." He says further: "But in any event, do not let us be misguided into the belief that no harm is done to patients with threatened loss of vision due to 'optic neuritis', if they have their turbinates removed and sinuses indiscriminately opened. No greater discredit could possibly come to rhinology as a specialty."

It can hardly be said that this dictum

accords, in all particulars, with the opinion of many eminent medical men.

As a result of this misunderstanding, a symposium on papilledema was held at the Montreal meeting of the American Academy of Ophthalmology and Oto-Laryngology. The subject was presented from three view points, that of the neurologic surgeon, that of the otolaryngologist, and that of the ophthalmologist. To the ophthalmologist this is a subject of especial and almost daily interest. He most often discovers this sign in the routine examination of the eye-grounds of patients who consult him because of headache or some such common complaint. He should have, therefore, an intelligent grasp of the facts concerning this important sign, for often the responsibility rests upon him to give this class of patients the proper advice.

When confronted with this condition, the ophthalmologist should immediately render what aid he can in helping to localize the lesion causing this condition, by careful examination, charting the visual fields, and carefully writing in black and white the exact condition of the discs and fundi. Then the patient should be referred to the neurologist, with notes of the condition as he has found it. This is not a condition for the oculist to treat.

Let us see the conclusion of the neurological surgeon. Dr. Gilbert Horrax, of Cushing's Clinic, in summing up his remarks from the neurological surgeon's view point, says:

In the first place, although there are few conditions other than brain tumor which may cause papilledema, or a condition of the optic nerves simulating it, the percentage of instances in which it occurs in these conditions is extremely small as compared to tumor. Second; the previously assumed etiology and treatment of 100 consecutive patients who had papilledema due to tumor was erroneous in 48 per cent. It cannot be stated with certainty that such treatment was instituted in all cases after swelling of the discs had begun or was disclosed by examination. In many instances, however, this was stated definitely in the record, and in others the amount of vision lost, and the appearance of the optic nerves after arrival at the clinic evidenced a process which must have been present over a considerable period of their previous therapy. Third; the delay incident to prolonged treatment upon an erroneous assumption resulted in some damage to

the optic nerves in every instance. This damage was severe in 27 patients, of whom several had reached the stage of blindness.

It may be concluded, then, that in the vast proportion of cases, papilledema means brain tumor, or at least a surgical intracranial condition equivalent to it. A neurologist or neurological surgeon should be given the earliest possible opportunity to see a patient in whom choked discs are discovered. Though a neurological surgeon is no more exempt than others from diagnostic error, he at least is likely to err therapeutically on the side which favors preservation of vision rather than on the side of procrastination in the hope that a choked disc may be due to something less serious than tumor.

Dr. Leon E. White, of Boston, concludes his paper on Papilledema in Oto-Laryngology in these words:

Edema of the disc was found in 4 per cent of the optic nerve disturbance arising from infections in teeth, tonsils, or accessory sinuses.

Swollen discs from accessory sinuses, teeth, tonsils is an unusual condition, is *transitory* and is always associated with sudden and marked impairment of vision. Papilledema is the usual condition in brain tumors and before advocating exenteration of the accessory sinuses a very careful study of the neurological side of the case should be made. In these edemas of the disc the burden of proof is on the rhinologist, and I should advocate no intranasal work until the possibility of brain lesion has been eliminated.

The so-called papilledema from infections in the accessory sinuses, teeth or tonsils is not identical with that associated with brain tumors, brain abscess, meningitis and lateral sinus infections. It would seem advisable to designate the edemas associated with sinus infections as "Optic Neuritis with edema" and restrict the word "Papilledema" to the edemas of the disc caused by increased intracranial pressure.

Choked discs (papilledema) are not always the result of tumor growth within the cranium.

Dr. James Bordley, Jr., in his paper, "The Significance of Papilledema to the Ophthalmologist", says that time and additional evidence have but more firmly convinced him that papilledema is of mechanical causation. He says he thinks of it "only as a visible manifestation of an increase in intracranial pressure." Even in cases of slight edema of the discs call for immediate consultation, because of the great danger of damage to vision.

In the past attempts have been made to differentiate various types of choked discs. Unfortunately, there is nothing peculiar to a choked disc of any given cause to indicate that cause. We only know that when we find the papilla swollen we have unearthed a symptom of some intracranial disturbance. To the physician looking for a solution of an immediate problem this information is not very inspiring,

as it has called sharply to his attention a process which may lead to blindness and even death without providing the means for an urgent diagnosis.

It is a comfort, however, to know that by a carefully executed process of elimination we can generally arrive at a fair conclusion. We know, for instance, that in simple meningitis swelling of the disc is extremely rare, except where an obstruction hydrocephalus complicates the late stages of meningitis, where it becomes almost inevitable. Its appearance is indeed a valuable indication of such a complication. Choked disc is likewise extremely rare in cerebral pyogenic abscess (doubtless because the brain is destroyed rather than pressed upon) except where there is considerable local edema, in which case there may be considerable rise in intracranial tension. This does not hold for tuberculous abscesses which follow closely the symptomatology of brain tumor. In the choked disc of nephritis we may have the typical picture of tumor, or find it associated with macular figure, depending upon whether there is a simple cerebral edema or edema complicated by extensive vascular changes in the retina. Syphilis is probably the most frequent of all medical causes in the production of choked disc, and its presence should of course always be determined.

Foci of infection remote from the brain and optic nerve may be provocative of choked disc. Such a complication is, however, extremely unusual, and such a cause, while requiring investigation, should not be too seriously stressed in the mind of the investigator. As an instance of focal infection I mention only in passing, nasal sinus disease. It has been my privilege to see nasal sinus disease complicated by choking of the discs, but in every instance where the cranial contents were viewed, either before or after death, there existed unmistakable evidence of an intracranial complication.

Dr. Bordley concludes his paper with the advice that a decompression operation should be advised in even protracted "mild cases" of papilledema, be the cause what it may, because "continual swelling, even without progressive change, is a sure indication that intracranial tension is not falling, and without such fall it can reasonably be expected that the vision will ultimately deteriorate."

This is the *sine-qua-non* of the saving of vision in these cases; and it is the saving of vision which must be the determining factor for the ophthalmologist.

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Pediatrics

FRANK HOWARD RICHARDSON, M.D., *Editor*
Brooklyn, N. Y. and Black Mountain, N. C.

Standards of Mental Development During the First Year of the Baby's Life

No matter how calm, sensible, and matter-of-fact a parent is, there usually comes a time when he or she is plagued with a doubt as to whether the first baby is mentally all right,—whether the proper intellectual development is taking place, or whether the child is going to be retarded, anywhere from a high-grade moron to a hopeless idiot. Foolish? Perhaps; and yet it is so very natural and understandable a trait, that it is only fair and right to give some standards or "norms" by which these perfectly justifiable doubts may be set at rest,—or, in the very rare instance in which they are to be confirmed, may lead one to the proper authorities for deciding the grave question of the mentality of one's child.

The whole matter of the time of the appearance of sight, hearing, touch, taste, and smell is a matter that has been the debating ground of experimental psychologists, observers of child-life, and others for generations. And yet, as will readily be understood, it is such a difficulty matter ever to decide upon accurately, that so far there are wide limits between which various authorities place the first appearance of these various senses. Perhaps the most interesting, as it is the most painstaking, of all researches along this line, is that of a German named Preyer, who studied his own child most exhaustively for some years, to determine these and other psychological points. The best known and most interesting of American observers and writers along this line is Millicent Shinn. Her "Biography of a Baby" gives in most readable form the results of months and months of intensive observation of a little niece, which formed the material for a thesis for a Doctor of Philosophy degree in Psychology. The whole thesis, while most interesting as a matter of inten-

sive observation, is almost too detailed to appeal to the general reader. Preyer likewise, while interesting for reference, is anything but "light reading."

The Bulletin of the Lying-In Hospital, New York, for December 1910, gives the results of some observations along this line made by Peterson upon over one thousand babies. Some of his conclusions may be abstracted, as a rough guide for those interested in making such determinations, and comparing the respective times in their own children with those in a fairly average group.

1. Sight. Sensibility is present in new-born, also in prematures.

2. Hearing. The same thing is true of hearing as of sound, contrary to the opinions of some authorities.

3. Taste. The nerve of taste reacts differently to salt, sweet, bitter and sour at birth, and also in prematures.

4. Smell. The olfactory nerve is ready to receive impressions at birth and even before, as evidenced by experimentation upon both the new-born and the premature.

5. Touch (as evidenced by skin sensibility). Present as above; (as evidenced by reaction to painful stimuli) there is every reason to believe that this is present too, though the reactions are enough more vague and uncertain than in later life, to make many assume that the sense of pain is dull at this time. Touch (in the form of muscle-sense) cannot be tested in infants, but there is every reason to believe that muscular sense, the sense of motion, and sense of position are developed early in utero.

6. Thirst-hunger and Organic Sensation. The new-born frequently reacts to thirst-hunger on the first day, though actual need of food is seldom apparent until after the first or second day. Discomfort is marked when nourishment is not forthcoming.

7. Beginning of Memory, feeling, and Consciousness. The child probably comes into the world with a small store of experiences and associated feelings and shadowy consciousness. The fact that all five senses are already developed in prematures is some evidence

that impressions have already been received and stored up in the dim storehouse of a memory already begun.

Ability to hold the head erect may be acquired at the third month; usually, not before the fifth; sometimes, even in perfectly normal infants, not before the ninth.

Ability to sit erect unsupported is acquired between the sixth and the eighth months.

Ability to stand,—with hand support, at the tenth month, or later.

Ability to walk alone,—average infant, from fourteenth to sixteenth month.

Laughing,—third to sixth month.

Speech,—intelligible words at about the twelfth month; two or three words intelligently put together, eighteen month to second year.

Kerley and Graves, in their "Practice of Pediatrics," (from which Peterson's findings as above are abstracted), gives also the following "Suggestions for Memorizing Facts Pertaining to Growth and Development," which will be found easy to remember and valuable as a rough guide.

"The multiplication table of the number 7 may be used as an association link in fixing many of the figures of growth and development in the reader's mind:

"7 equals the approximate weight in pounds at birth, the approximate month of life when the infant sits up and when he cuts his first tooth, the approximate year in life when he enters upon his second dentition.

"7x2 equals 14, the approximate circumference in inches of the head and chest at birth and the number of the month when walking is unassisted.

"7x3 equals 21, the approximate length in inches of the body at birth, the approximate weight figure for one year, the number of the month when the anterior fontanel is closed, and a little more than the circumference of head, chest, and abdomen at three years.

"7x4 equals 28, the approximate weight in pounds at two years and the height in inches at one year.

"7x7 equals 49, the figure for both

weight and height at seven years.

"In addition, it is easy to remember that the ordinary child doubles his weight at five months and trebles it at one year, and that the weight increase from two to seven years ranges between four and five pounds per year."

While it is very simple to state some of these facts, it will readily be realized that their determination may be matter of extreme difficulty in the given case. Take for instance the question of determining whether or not a child can hear. How are you to tell? You clap your hands or slam a door, and the child looks up, or cries. Is this action a response to sound waves striking upon his ear drum; is it due to a sensation of jarring due to the stimulation of a sense of muscle-tone; or is it due to the stimulation of skin-sensibility, from the air-waves set in motion by the closing door or the clapping hands? One has only to try to test out some of these reactions of the various senses, in order to realize how next to impossible it may sometimes be to arrive at a satisfactory conclusion in a given case.

For practical purposes, perhaps nothing better has been made available for actually checking up the development of the mental progress of the child, than the epitome of the work done along this line by Doctor Arnold Gesell, Director of the Yale Psycho-Clinic. In his recently published book, "The Mental Development of the Pre-School Child," he takes up a number of tests which may be applied to an infant or an older child, with the idea of placing the stage of mental development at which he has arrived. His tests are all simple, and such as a doctor in his office or a mother in her home, can readily apply. They have been tried out under ideal circumstances upon a group of children sufficiently large to give them the authority of a real system for evaluating mental progress. He chooses certain ages as important points in the journey of the child from birth to school-age; and tells how the superior child, the rather bright child, and the average child may be expected to react to certain stimuli

at these ages. By comparing the behavior of the youngster to be tested with the actions of these carefully tested and recorded children, a very definite idea may be obtained of the mental status.

The ages chosen for these important stations are as follows: Four months; six months; nine months; twelve months, eighteen months, and two, three, four, and five years. Those of the ages included in the first year of life have been summarized here, with a view to giving a set of simple tests for the use of a mother, or of a doctor not specially trained in psychological lines. They are the most practical and satisfactory that have come to light, from among all the great mass of work that has been done on this subject.

At four months, the baby should show *some* response to the expression of a person who is trying to attract his attention. He should hold his head erect pretty continuously, unless fatigued. He should make some effort to sit up, when placed lying down upon his back, by lifting his head or shoulders. If laid upon his stomach, he may raise his head from the table. In this situation, he should make some sort of locomotion, by wriggling or squirming. Placed on his side, he should roll over upon his back. If supported under the arms so that his feet just touch the lap, he should make a pushing effort. He may be beginning to utter such simple sounds as ah, eh, eeh, and ooh. He should notice a person walking about within his sight. He should blink, if a saucer held a few inches away is tapped sharply with a spoon. He should turn his head at the sound of a voice. If a sheet of paper is placed flat upon his face, covering it so that one has to peep beneath it to see his expression, he may simply increase his activity, or he may cry out. He notices a spoon, if it is placed on the table before him, and especially if it is waved before him. He holds an object placed in his hands for a few moments, or even longer. If a pencil is placed in the palm of his hand, he resists its attempted withdrawal. A red-painted wooden embroidery ring dangled before

his eyes attracts his attention; and he may reach out for it. He enjoys his bath; he smiles; and he *may* have begun to laugh aloud. He plays with his fingers; and *may* play with his feet. At this age, he should turn his head at the sound of music, of a voice, or of the ringing of a bell.

Development moves on apace, at this early stage. At six months, he may sit, with but slight support. He can probably roll over from his back to his stomach or vice versa. He may be conscious of strangers. He may pat on the table, or bang with a spoon; he will reach for the spoon, and *may* put it into his mouth. If the red embroidery ring is dangled before him as he sits on his mother's lap, he may either reach for it, or "close in on it" by bringing his hands together so that his arms surround it. Some children are conscious of strangers. He may even frolic when playing with, though it is a little early for this. In the tub, he has added hand splashing to his four-months-old kicking.

At nine months of age, he is practically sure to be sitting alone. If a spoon with which he has been playing is dropped to the floor, he looks for it. If a little one-inch cube with which he has been playing is suddenly covered with an inverted cup, he lifts the cup up,—though it is unusual for him at this age to secure the cube. He has begun to manipulate articles with one hand. When the embroidery ring is dangled above his head, he tried to pull it down. He *may* have begun to say "da-da, ma-ma;" he may also have begun to show a comprehension of some little sentence, such as "How big is baby?" by putting up his hands, etc. He *may* say or wave "bye-bye." At this age, he may laugh or coo on hearing music.

At the end of the first year (the twelve-month level), our baby will certainly stand, with help; he may even stand alone. He may walk, with help. He should say three words, in addition to da-da and ma-ma; he may say four; and perhaps five. He is pretty sure to be able to secure the cube, as well as to

lift up the cup which conceals it (see preceding paragraph). He should be able to put this cube into the cup, if told to do so and shown just how to do it, several times if necessary for him to get the idea. He will undoubtedly play "pat-a-cake" or "peek-a-boo." He answers familiar sentences with little responses of his own, as: in answer to "Where is the kitty?" he looks in a certain direction, etc. He should by this time stop doing something at the injunction, "No, no!" He may have so far attained to manhood as to try to put on his shoes.

If one has real doubts on the question of his child's intellectual or sensational development, the wisest thing to do is to select some children's doctor in whose common sense one has confidence, and put the whole matter in his hands for both diagnosis and treatment. It is only fair to one's self to remember, however, that many a famous man has been adjudged seriously or even hopelessly retarded in his childhood, youth, or even early manhood,—only to catch up and distance his supposedly more normal associates, and startle the world with his brilliancy later on. It is also but fair to remember that there are various lines in which one may be either retarded or advanced,—such for instance as the purely intellectual, the musical, the dramatic, the manual, the scientific, etc. The child who is far behind in one or more of these lines, may much more than compensate by a degree of advancement along others. And finally, let us remember that all dates and times given are but approximate estimates based upon averages, and not absolute in any sense of the world. The world would be but a dreary place, were all of us to conform to the average.

Orthopedic Surgery

O. L. MILLER, M.D., *Editor*
Charlotte

Obstetrical Paralysis

The wholesome commercial progress of a community, a state or section of a country is indicated by the well being

and the bank savings or the per capita wealth of its masses, and not by its sprinkling of individual capitalists. Everything is finally based on the law of averages.

How well we succeed in medicine in a community, a state, or a section of country is determined by how well we serve or protect the public, whose welfare, according to the British General Medical Council, is "the prime object of the medical profession."

The index to the efficiency with which various localities are served from a medical standpoint is determined in the orthopedic field by how many preventable diseases and correctable deformities are allowed to grow past that period when constructive help can be given them; further, by the attitude toward the expected end result in acute fractures; and, lastly, toward shortening the period of disability of the injured, as it pertains to his occupation and his economic recovery.

There are said to be some communities where the average dissemination of medical and surgical knowledge exceeds ours. However debatable that may be, or granting that we equal or exceed the average, it would not be the program of progress on our part to in any way let up in our endeavors to improve. It will be the policy of this column to from time to time devote itself to urging that we improve our present status of preventable deformities and in some small way contribute to the average advance of medical and surgical service.

There is one type of deformity which has a clearcut opportune time for treatment and which should be recognized in the first few days of the life of one so unfortunately affected. When this is the case, and appropriate treatment is instituted, an unhappy situation can be turned into a more encouraging one.

The conclusion from Boorstein's article on "Obstetrical Paralysis (Erb's Palsy)" as given in Twenty-fourth Report of Progress in Orthopedic Surgery, September, 1924, sets forth very fully and instructively the proper understanding of, and attitude toward, this lesion.

1. Obstetric brachial paralysis

is due to stretching or tearing of the cervical nerve roots of the brachial plexus. 2. It is almost always associated with a difficult labor, in many instances forceps having been used. 3. The condition occurs in boys as frequently as in girls, and the right side is more frequently affected than the left. Affection of both arms is very infrequent. 4. The upper arm type is due to injury of the suprascapular and the fifth and sixth cervical nerves. It is much more frequent than the lower arm type. 5. The whole, or lower arm type, is due to injury of the entire plexus. 6. Vertex presentation shows the larger percentages of occurrences of both types of cases. 7. Improper management of the shoulder is responsible for many cases; hence, they may be prevented by the obstetrician. 8. If these cases are treated early and properly one may expect, in the mild cases, a good recovery in three or four months. 9. The more severe cases will require about six or seven months for complete recovery. 10. Nerve operations are indicated if no advance is made in four months. After that period, if sufficient improvement is noticed, one may wait four months more, provided, of course, appropriate treatment is continued. 11. The shoulder should be immediately put up in a splint or brace to prevent stretching of the paralyzed muscles and contractures of the unopposed muscles. 12. The support must be kept up for a very long time, eight or nine months, as deformities may occur. Of course, massage and exercises are begun early. 13. Even in the whole or lower arm type one may try conservative treatments for a while and then resort to a plexus operation. The result is not so discouraging as some text books would lead us to believe. 14. The deformity at the shoulder; viz, the adduction and internal rotation, can easily be corrected by tenotomies.

15. The pronation of the forearm can be corrected by a muscle transplantation. 16. A patient suffering from this affection should be under proper observation at least until the age of 10 years, as a slight recurring deformity may present itself.

Surgery

A. E. BAKER, SR., M.D., *Editor*
Charleston

In every operation for gall stones a choice must be made between simple cholecystostomy with drainage and removal of the gall bladder.

Four years after Marion Sims, in 1878, put cholecystostomy on a firm basis, Langenbuch advocated the removal of the gall bladder. For several years it has been a question as to which operation is to be preferred as a routine. It is now approaching solution, very much like that of the appendix. To achieve an ideal result in cholelithiasis it is not only necessary to remove all stones, but to remove the source of formation of the stones, that is, the infected gall bladder.

A recent paper by Dr. W. Koerte, "The Indications for the Operative Treatment of Cholelithiasis" is worthy of comment, in which he says: "There are two stages of the disease to be differentiated: (1) that in which, though the stone produces mechanical irritation of the bile tracts, there is no evidence of inflammation or infection (regular cholelithiasis, Naunyn), and (2) that in which, through the introduction of infection in the gall bladder or bile tracts after deeper penetration of the stone into the ducts, inflammatory manifestations of an acute or chronic character arise, (irregular cholelithiasis, Naunyn).

The first stage may become latent and remain quiescent for a long time or even for life, but is apt to recur, and may at any time advance to the second dangerous stage, from which a remission to the latent stage seldom occurs. It is emphasized that the passage of the stone is not a certain indication of spon-

taneous healing; many other stones besides the one that was passed may be present in the gall bladder.

While medical management was formerly preferred in the first stage, a number of famous surgeons have now expressed themselves in favor of early operative interference. However, the impossibility of predicting the course of the condition and the uncertainty in the early diagnosis increase the difficulty of establishing the indications for early operation. The surgeon must be governed by the severity of the symptoms and must be mindful of the fact that delay may lead to serious injury.

Acute infectious cholecystitis and common-duct stone present an absolute indication for operative treatment, either during the attack or, as Hotz proposes, immediately after the acute inflammation has subsided. The only contra-indication is serious disease of other organs (heart, lungs, vascular system, kidneys) or severe diabetes. Age is not of itself a contra-indication; neither is deep jaundice, although it increases the risk of operation. In cases of jaundice operation should not be postponed for more than fourteen days. If the coagulation time is increased, the danger of operation may be lessened by the administration of calcium or small intravenous injections of blood or serum.

In chronic recurrent cholecystitis the severity of the symptoms are disproportionate to the findings at examination. The indications for operation are persistent tenderness, a palpable swelling in the region of the gall bladder, febrile attacks, the periodical appearance of transient jaundice, and frequent need for morphine. Long delay may result in severe injuries. In morphinism the use of morphine must be reduced as much as possible. Operation in these cases reveals advanced disease of the bile tracts and frequently beginning or even complete rupture of the gall bladder into the surrounding organs. Less frequently there are no stones and only inflammatory changes and adhesions between the gall bladder and its neighbor-

ing structures. Chronic hydrops of the gall bladder does not in itself constitute an indication for operation unless there is infection. An inflamed obstructed gall bladder is an absolute indication for intervention. Whether a prophylactic operation should be done in symptomless hydrops must depend upon the conditions in which the patient lives as regards the danger of sudden infection."

Urology

A. J. CROWELL, M.D., *Editor*
Charlotte

Use of Indwelling Catheter to Induce Passage of Ureteral Stones

Edwin Beer and Leo J. Hahn, New York (*Journal A. M. A.*, April 4, 1925), call attention once more to a method of which they have made use during the last one and one half years, and which they believe should be used more often in cases of calculi lying in the lower half of the ureter. This method consists simply in passing a catheter beyond the stone and allowing it to remain therefor from two to five days. This procedure may result in the passage of the calculus within a few hours after the withdrawal of the catheter. The mechanism is not clear. Perhaps the edema of the mucous membrane which holds the stone is allowed to subside; perhaps some traction on and dislocation of the stone are caused by withdrawal of the catheter; perhaps dilatation of the ureter is the chief factor. Whatever the mechanism, it has two great advantages over other methods in this category: a single treatment frequently suffices to deliver the stone, and stones are passed with very little pain. The method has been tried in twenty-seven cases in Mount Sinai Hospital and has accomplished the passage of at least ten stones. Of the twenty-seven cases in which it was tried, the diagnosis of stone was very doubtful in one case. Four additional cases were not favorable for the use of this method, the stone being rather large or high up in the ureter. Of twenty-two cases in which this method might seem to have

been indicated, there were ten proved successes, or 45 per cent. Two additional patients almost certainly passed the stone in the hospital as evidenced by cystoscopic findings before and after; but as the stone was not recovered, these are not included in the ten successes. Two other stones were passed after discharge from the hospital. In other words, out of twenty-two cases, probably fourteen successful deliveries were obtained (60 per cent.). The method is simple and apparently without danger. Beer and Hahn have seen no bad results in their cases, although bacteriologic studies have not yet been made.

Syphilis "Arrested"—Not "Cured"

The indiscriminate use of the word "cure" in the treatment of syphilis should be discontinued and the patient should be made to think merely of an arrested condition as in tuberculosis. According to a report just made public, such is the opinion expressed by the conference of the United States Public Health Service and State venereal disease control officers last December at Hot Springs, Arkansas. This conference advised that persons undergoing treatment for syphilis should expect and seek observational control at appropriate intervals, and under proper medical care, throughout a period of years—instead of considering themselves cured after a few months' or a year's treatment—in order to avoid the late involvement of the heart, blood vessels and nervous systems. The adoption of this attitude by the conference is disclosed by the report of the Hot Springs meeting which has just been published in pamphlet form by the Division of Venereal Diseases of the United States Public Health Service.

Among other things, the conference found that three years may be prescribed as the average period of treatment for the early case of syphilis before it is placed on observation. Five years has been widely accepted as the lapse of time required to reduce the infectious possibilities to a point where marriage may be contemplated.

A VETERAN DOCTOR*

I. *His Schooling and Soldiering*

H. J. Walker, M.D.
Huntersville, N. C.

I was born in upper Steele Creek, now Berryhill township, June 24, 1836, was reared on the farm and attended a three-months' school. At that time there were no schools supported by county or state. The schoolhouse of that day was a one-room log house with one log cut out of side for a window. The seats were slabs with holes bored through for legs,—no backs. The desk at which we were given our writing lessons was a long plank nailed along the wall under the window, with a slab bench on which to sit. Sometimes the teacher knew very little more than the pupil. Our books consisted of Webster's blue back speller, Davie's arithmetic, and a very crude geography from which we learned that the chief products of North Carolina were tar, pitch and turpentine. The discipline of that day was very strict; neither age, size, nor sex exempted you from the long hickory which always adorned the corner. Our amusements were town ball, cat-ball, bull-pen, and "anteover". At this school in 1857-58 boarding at old courtship of the little girl that afterward became my wife.

There were a few more advanced schools than the one just described, one of which was in Sharon township, taught by Conner Reid, the most prominent teacher in the county at that time. He was a graduate of Davidson College, a very fine teacher, and a very strict disciplinarian. At this stage algebra, geometry, Latin and Greek were added to the curriculum. I attended this school in 1857-58 boarding at old Uncle Hughie Kirkpatrick's. Later the same teacher moved over to Back Creek, and I followed, at this place boarding with old Uncle Robert M. Cochran. There were seven boys in the crowd, and of course we were always into some mischief. The Southern Railroad was then being built through there. One night the bunch were walking around, and it dawned on some of us to

catch Uncle Robin's calves and dump them into a deep railroad cut in front of the house. One of the party, who on all occasions took it upon himself to reprove our escapades, remonstrated with us for this; for answer we dumped him into a cart standing by and gave him a free ride bumping along the crossties. Uncle Robin had a fine four-year old colt that had never been broken. Several of the negroes had tried to ride him, the last getting his collarbone broken. I asked Uncle Robin to let me try to ride him and he consented. My first attempt was successful having taken the mother of the colt and an old negro with me. After a hard struggle I mounted the horse and rode to the house like a conqueror coming home from battle. An old negro remarked "You jes listen to me, dat ar 'boy is gwine to cotch it." A few days later when riding to the postoffice in passing under a tree a small limb fell on the horse which caused him to give a tremendous plunge, the saddle girth broke and I went backwards. As the horse ran she threw a lump of mud in my face, leaving me behind as she went on home, where there was great merriment among the colored folk over my discomfiture. My pride and self-respect were restored though by being permitted to ride the horse home to see my family and sweetheart. I rode to church, escorting a young lady. After helping the young lady mount her horse, I mounted my own, when he suddenly plunged, throwing me into the air, and landing with such force that my pants were split.

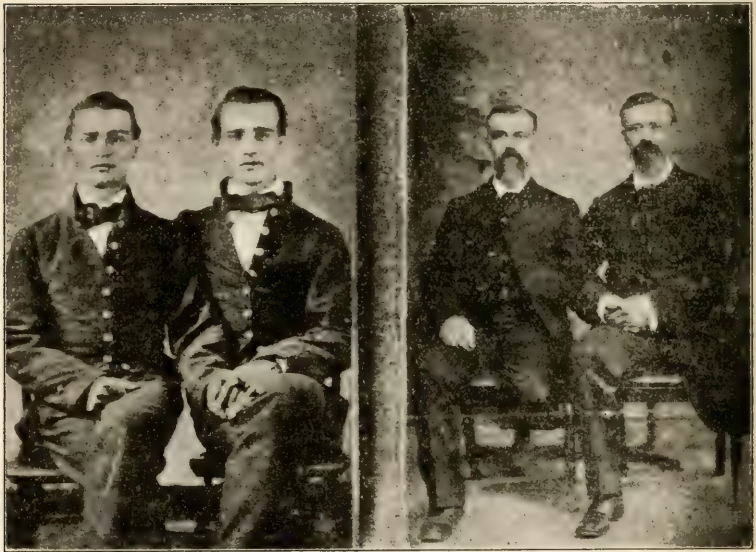
My next school was in Little Steel Creek, at which school then were two teachers, Professors Pressley, and Watson Reid.

We had a large school for that time, twenty-two boys being from S. C. While there many mischievous things were traced to us, among them carrying Uncle Car Reid's goats up into the gallery of the church and throwing them out the window to see them land on their feet. From this school in 1860, I went to Erskine College, Due West, S. C. Boarded with Prof. Young in his beau-

tiful home. I was never among a finer people. All were on an equality. The *open sesame* to the best homes was a good character. During this time the peace and quiet of the country was disturbed by the mutterings of war between the states, which made it impossible for us to concentrate on our books. On receiving a letter from my brother L. J. Walker, saying that he was going to join the army, quite a number of us took "French leave" one night and started home, fearing the war would be over before we could get there.

made from cloth woven at Rock Island Factory on the Catawba river in Lower Steel Creek. The homefolk remained with us until our train pulled out about sunset.

We were in several training camps up until May 5th, 62, when we had our first fight. We fought in the old Cornwallis breast-work, and in this fight lost a number of men. Among them was Joe Thompson, Lt., first honor man of Davidson College. Capt. A. A. Irvine was badly wounded. My next battle was at Fredericksburg. On our left at



1. Off to the war.
L. J. Walker

2. A few years after Appomattox.
H. J. Walker

On April 16, 1861, we formed Company B, Randalsburg Riflemen, 3rd. Regiment Volunteers, made up of Steel Creek and Sharon boys. On the day we were to leave for training camp at Raleigh, our sisters, sweethearts and mothers went to Charlotte with us. Our uniforms lacking the buttons which we received that day, our sweethearts sewed them on for us. Our uniforms were

Marye's Heights, the enemy, under Hooker, made five unsuccessful charges against our line. After they fell back we heard a wounded Yankee soldier crying for water. One of our men went over the breast-works with a canteen of water for him. As he gave it to him a cheer went up from both armies. Earlier in the action, when the enemy was shelling the city of Fredericksburg, a

little three-year-old girl ran out in the street, trying to pick up shells as they fell. One of our men, seeing her danger ran after her carrying her back to safety where he kept her all night, the child crying herself to sleep. The next morning he carried her on his shoulder through the town until her mother seeing her, came sobbing and crying with joy over finding her baby. Sixty-two years later, at a meeting of World War veterans in Charlotte, I was telling this story when a man called out, "I knew that child after she became a woman, she has but recently died."

The next battle in which I took part was September 14, 1862, at South Mountain, where D. H. Hill, with four Brigades held part of McClelland's army in check until Jackson captured Harper's Ferry. At this battle Governor Glenn's father was killed. He was a Capt. His men carried his body about four miles back of the line and buried him under a walnut tree in a cornfield. That night we fell back to Sharpsburg. On the morning of the seventeenth, Jackson joined us there, and other divisions came in. This was one of the bloodiest battles of the war. We had thirty-five thousand pitted against eighty-seven thousand in a pitched battle. Night coming on, both sides remained in line of battle all night, and our forces recrossed the Potomac next morning.

Our next battle was at Chancellorsville. Our beloved Gen. Jackson received his death wound when we were all flushed with victory from having marched clear around Hooker's army attacking him in the rear, where Hooker was almost completely routed. In the attack we came upon the enemy, surprising them while pitching horseshoes, cooking and doing various other things. The surprise was so complete that many of them never reached their guns stacked nearby. During the excitement we didn't fail to get some of the beef cooking in their kettles, for we were very hungry.

Along the route, in passing an old farmhouse, I saw a soldier pick up an axe and break the lock off a cellar door.

Two ladies emerged, who had been arrested by the Yankees and imprisoned as spies. They waved their bonnets and cheered us on. Night closed the struggle, but it was resumed next morning before day. My company being in advance, we were under an enflaming fire, and ordered to lie down. Lee Swan was killed by my side. The firing became so severe, that seeing a tree just in front, I jumped up and rushed to it for protection. As I did so we were ordered forward. As the line hesitated to obey our Colonel called out, "Will you let your Sergeant go alone?" For this *act of bravery* I was promoted to Lieutenant! To prevent our advancing the Yankees set fire to the woods which were very dry. We had quite a serious time getting our own and the enemy wounded out before the flames reached them.

I participated in the fight of Gettysburg, July 1-3rd, where we met the enemy at Seminary Hill, where our attack was premature. We charged a battery and were repulsed. In this charge Brigadier Gen. Scales, afterwards Governor of N. C. was wounded, and here my brother, L. J. Walker, lost his left leg just below the knee. (Later on in the retreat from there I lost my leg on the same side at the same place). Being reinforced, we made the second charge, captured the battery and killed many of the enemy, not stopping until we ran the Yanks clear through the town. I secured permission and went back and assisted in getting my brother off the battlefield, having about fifteen minutes with him. I was not engaged the second day. On the third day the whole line of battle charged about four in the afternoon, but for want of reinforcements, we failed, falling back to our original line until the morning of the fifth. The Yankees didn't invite us to celebrate the Fourth of July with them. Being on the picket line covering the retreat, I lost my leg at Hagerstown, Md. My left leg was amputated late in the afternoon at a farm house on the banks of the Potomac, by Dr. Campbell of Statesville, N. C., after

which I was placed in an ambulance and carried across the river on a pontoon bridge, with the river very much swollen. Early in the night the enemy was reported advancing. The young man driving the ambulance, drove out into a pine thicket and left us, another wounded soldier being in the ambulance with me. We remained all night, with only a canteen of muddy water from the river to refresh us. Early in the morning we attracted the attention of passers-by, the driver of the ambulance returned with his horses, and we resumed our journey to Martinsburg, Va., where we were placed in an improvised hospital in a Methodist church. Boards were laid across the tops of the seats which served us as beds, with one blanket for covering and hay for a pillow. There were continued skirmishes between ours and the enemy's cavalry for several days, or continual changes of occupation. We were without medical attention and dependent upon the citizens for food. They were indeed kind to us. Finally I was taken to a private home, by an old gentleman by the name of William Riddle. He had living with him four nieces, their brother being in the army. The young lady who took special care of me through a very tedious case of camp fever, Miss Jennie Riddle, had a soldier detailed to help in nursing me. For quite a time I was delirious; at one time they thought me dying. While in this delirium the young man who was nursing me fell asleep. I heard music down stairs and got out of bed and crawled downstairs and in the midst of a crowd of girls. Their screams wakened the soldier, when he saw my bed empty he thought at once I had jumped out the window. He ran downstairs and finding me in their midst carried me back to my room. In my delirium, I thought Miss Jennie Riddle was my sweetheart back home and called her Katie all the time. After I was convalescing one day the young ladies were taking me for a walk, when a drunken Yankee soldier came up and began cursing me. One of the girls stepped between us and protected me until an officer came up. When it

was known that I would soon be carried to prison, Uncle Johnnie Riddle came to my room one night and told me if I would take the oath, he would turn over to me a large store filled with goods, which had been closed since his nephew joined the army, allowing me everything I could make above what was necessary to keep the family. He said I was wounded and could never fight for my country again. If I refused to take the oath I would be carried to prison. He wouldn't let me answer him that night. Early the next morning he came up to know my decision. When I told him I couldn't take the oath, he said "Son forgive me for tempting you, I shouldn't have done it." While in this home a young lady from Baltimore, Miss Mollie B. While, visited these young ladies. After returning home when she learned I was at West Building Hospital, Baltimore, a prisoner, she and her mother came with food and clothing for me, but were refused entrance. Later she succeeded in getting a bundle to me, containing a full suit of clothing.

While in prison here one of the attendants in the hospital was washing and dressing the wounds of the prisoners. I noticed he changed neither water nor sponge as he went from one to another. Knowing there was gangrene in the hospital, I was afraid of infection and refused to allow him to dress my wound. Soon a couple of soldiers appeared to take me out for punishment. Gen. Leaventhrop, a Confederate prisoner, having heard the conversation, came to my rescue. He called the officer of the guard, to whom he explained the situation. The hospital attendant got his revenge later when prisoners were being exchanged and I had slipped into line, he, knowing I was an officer, reported me and had me called back. From this prison I was sent to Johnston's Island, in Lake Erie. On the way in the transfer with me was an old white headed man, Gen. Trumbull, who had lost a leg. The transfer stopped at a hotel for a few minutes, a gentleman stepped up and inquired, "Who is the whitehaired man"? The reply

was, "Don't you know Gen. Lee"? This caused quite an excitement among the hearers for a little while.

After boarding the train (it was a very cold windy day) one of the guards stepped in from the platform with a handkerchief tied around his head. I said to him, "Yank, what are you doing with a white flag up." He told me he had lost his cap, I supplied him one from the bundle my young lady friend had slipped me. I was treated with great kindness all along the way. At noon when the train stopped, the officer came and said "Johnnie don't you want to stretch that one leg of yours?" He helped me off the train and across the track to a refreshment stand where he treated me to fried pie, cake and a glass of wine to wash it down. Arriving at Sandusky City at night, a number of the guard, including the officer, came to shake hands with me and say goodbye. They said, "Johnnie we wish you could stay with us tonight instead of going to prison." I was then taken on boat three miles to the prison on Johnston's Island. We were put inside the gate in the night, not knowing where to go, or what to do. I managed to get into the kitchen where I spent the night. Early the next morning, a member of my company, Ed Smith, who had been there some time, found me more comfortable quarters. I was placed in Block Thirteen. Our sleeping places were bunks on the walls, three tiers high. I was in the lower tier, with Lt. Frank Lewis of Wautauga, who was exceedingly kind to me. There being a sutler (store) in the building, Frank and I finding we needed some funds, bought tubs, board and wringer and established a laundry. I did the rubbing and Frank did the running around. We enjoyed the music of the cracking of the cooties as they passed through the wringer. Many of the men had money, hence business was brisk for a while.

For entertainment, books and papers were sent in to us. We organized our own theater. We had some good talent and some fine plays. One ran for some time, "Hospital Scenes at Gettysburg," written by Lt. Pealer, of Quincy, Flori-

da. We had a law school and medical school. Our spiritual interests were looked after too. At one time we had a protracted meeting, which continued about a month, conducted by three preachers, Methodist, Baptist, and Presbyterian, in which much good was accomplished. We had a minstrel which was very fine. The entrance fee to all the entertainments was fifty cents, all wounded getting in free. The proceeds went to getting comforts for the sick. All these enterprises were carried on by the prisoners themselves. We had doctors, too, among the prisoners, but having no medicine, we were deprived of medical attention.

During the cold weather we were furnished with some tainted meat, which caused considerable illness among the prisoners, diarrhea being very prevalent. There were only a certain number of persons permitted to go to the toilet at one time. A Captain who was very weak, started to the toilet. Negroes were guarding us. The negro guard called out, "Halt Dar, Halt dar." The Captain explained the situation and started on, the guard fired, shooting him through the calf of his leg.

At nine o'clock at night each block was called and the command was given "Lights Out." One night a man in the second story was reading when the call "Lights out" came he was not quite through his story so didn't obey immediately. The guard fired at the light cutting the top button off the man's pants. He obeyed instantly after.

At one time in 1864 the thermometer stood twenty-two below zero. Lake Erie was frozen over, and for weeks all supplies were brought over from Sandusky City, in wagons on the ice. During this time the death rate was heavy, the building being built depot fashion, no ceiling nor plastering, could not be sufficiently heated. The food supply also being inadequate left us susceptible to the cold. During this time the cartel of exchange was annulled so there was no chance of getting home.

We had two noted characters in the prison, Gen. Jess Thompson, from Missouri, and May Smith, from Carters-



3. Now.

ville, Ga., better known as "Bill Arp." They were great chums, and afforded a great deal of amusement for the boys. They were noted chess players. The games were played in each block, a man standing out on platform of stairway calling out each move of these two players, when the players in the other blocks would make the same move.

At one time Capt. Winston, of Hickory, N. C., escaped from prison, and wrote quite an interesting account of his escape and trip home. There were other escapes. Three attempted to escape and were caught, they had spent quite a while in digging a tunnel under one of the buildings. They did it at night, carrying the dirt back under the house out of sight. During a rain storm they attempted escape, two getting through, the tunnel, the third being a large man, became fastened in the tunnel, and could neither go forward nor backward. The water began pouring in and he was in danger of being drowned. The guard heard him making a noise and rescued him from a watery grave. The two who had gotten out were recaptured.

During the long siege of low temperature, about a hundred banded together

to try to escape. They tore up their blankets and wrapped their feet to prevent slipping on the ice as they would cross the frozen lake. Just as they were about to rush the guard at the door, the cannon from the block house was turned on them. On learning they had been spied on and reported they caught the spy and hung him from the rafters before the guard could prevent.

In May, 1864, we were exchanged. On the way home we stopped at Pittsburgh, Pa., when we were entertained in a big building. On long tables was spread corn bread and pickles. The boys were so indignant over the insult offered us that they threw the pickle bottles against the walls. On the way up to Richmond we were followed by Yankee gunboats, from their hiding places along the shore. Gen. Butler, who was in command, hid behind the wheel for protection. We remained but a short time in Richmond where we were entertained in the hospitals. The journey home from Richmond was very slow and rough, as we were traveling on box and flat cars. We arrived in Charlotte May 17. I was transported from the depot to the Charlotte Hotel, where Efrid's now stands. Without a penny I ordered

dinner, as I was very hungry. After dinner, I picked my teeth wondering how my bus and hotel bills were to be paid when I spied my brother-in-law to me, Bill Berryhill, who paid my bills which amounted to sixteen dollars in Confederate money. I was taken out home by a neighbor, Billie Brown, surprising my family. I was accompanied on my trip home by quite a colony of cooties, which were a curiosity to the homefolk. After seeing the home folks, my heart yearned to cross the fields to see my little sweetheart, but being one leg less than nothing I hesitated to go, fearing that she would not care for me in that condition. I remained in that state or torture for two weeks, when a mutual friend told me the little girl was grieving and wondering why I didn't go over. I went immediately. As we had been engaged for seven years, we were only a short time in arranging for an early marriage. Katie's mother had died the first year of the war, and she, being the eldest daughter at home, and the housekeeper, her father stipulated that we would remain with him for a time, as he was quite an extensive farmer, and his boys in the army, he needed my help as well as hers.

Being destitute of suitable clothes in which to be married my brother, William, lent me a suit. Katie plaited me a hat from rye straw, and one for herself from corn "shucks." She had spun and woven dresses for herself, but finding I had no new clothes, she was married in an old silk. It had been long since sugar and coffee could be purchased even by driving to Camden, S. C., where my father-in-law had gone for supplies for some time. Fortunately when sugar began to get scarce Katie had filled a jar and put away, saying that was for her wedding cake. It was used for that and was quite a luxury. Parched wheat served for coffee. There was a wedding dinner according to custom and every old soldier on furlough was invited. There was no dancing and merrymaking, as all were too sad over war conditions. The next day the "infare" was held at my father's home, a similar dinner being served to the

same guests. My brother, L. J. Walker had a similar wedding some years later. The morning of the wedding he had the misfortune to break his artificial leg, so dispatched a negro with a note to me which read thus, "Dear Jack, please lend me your leg; I broke mine."

In 1864 I began teaching school at a salary of sixty dollars per month in gold. At the same time I began the study of medicine. Seeing so much destitution and suffering and need of help, I felt that my life couldn't be invested in a better way for the help of those in need than by the practice of medicine. I also considered it a high honor and privilege to practice medicine and relieve suffering humanity.

*Editor's Note: Dr. Walker will contribute another article recounting his experiences in Medicine. Probably this is the only instance in history in which two brothers have lost the same leg in what was virtually the same battle. Both the brothers are hale today. Dr. Walker is father to our Mayor J. O. Walker. For more than ten years his sight has been so poor as to deprive him of the pleasure of reading. Despite this and a great deal of suffering from a neuroma in his stump he retains his cheerfulness and looks forward with eager interest to the celebration of his 89th anniversary next June.

TWO HEROIC MEDICAL CHARACTERS IN OUR OWN TIMES

(By Special Correspondence)

Dr. Thomas Graham Faulkner was graduated from the University College of Medicine, at Richmond, Va., in 1910. He was appointed Interne at the Virginia Hospital and immediately entered upon his work there.

In the autumn of that year, before finishing his term as Interne, an opening occurred near Kinston, his home city, as Contract Surgeon for the Goldsboro Lumber Company, at Dover, N. C. It carried a substantial salary and also gave opportunity for a good outside practice in addition. He resigned his position at the hospital and accepted

this place, which he filled to the entire satisfaction of the company and his out-side patients.

On April 7th, 1911, he attended a "Shad Stew" on Neuse River near Fort Barnwell. Not finding enough fish there, he and some others took the seine and tried for more. In this work all got wet and, in a spirit of dare-deviltry, Dr. Graham stepped to the river bank where he thought there was sufficient depth and dived in, fully clothed. The water was quite shallow at the point and his head struck sand at a foot or two beneath the surface. When he did not come up one of the others waded in and brought him out. Practically totally paralyzed, he had been holding his breath, expecting death, well knowing at the instant what had happened to him.

Taken to the hospital in Kinston it was found that there was a slight fracture of the sixth cervical vertebra but no displacement. The next morning he was taken to Richmond, to St. Luke's Hospital. Dr. J. M. Parrott's diagnosis was found to be correct as to the existence of fracture and its location, and, like him, the surgeons thought the case hopeless, due to the profound state of the paralysis. Below the upper arm muscles and the upper chest the paralysis was absolute (of motor and sensory nerves), and there was no reflex action whatever. This led to the belief that the cord had been crushed or completely severed. Operation for this was thought to involve resection of the cord, which, at this point was extremely dangerous and beyond any reasonable hope. Dr. McGuire told the patient this. His reply to Dr. McGuire and the other surgeons present, was that he realized his condition and had very little hope, that he expected never to come out from the anesthetic, but that he wanted him to operate and to call in all available surgeons to witness it, in the hope that something might be learned from his case that might promote a better understanding of these cases and help in saving some future sufferers from this accident.

Operation was performed on Monday

April 10th. Dr. McGuire stated that he found one of the laminae of the sixth cracked, the other intact, no displacement. The spinous processes of this and the seventh and first dorsal were removed. The meninges were distended with bloody serum and there was great pressure. When punctured and collapsed the cord appeared by palpation to be firm and not to have been crushed. Some little hope was felt after the operation; but, when, after a reasonable time had passed and no sign of improvement was manifest, it was thought that he could live but a short time.

Miss Ettamae Newton, of Abington, Va., was a student nurse at the Virginia Hospital during Dr. Faulkner's internship there. They were to have been married when she had finished her course and the young doctor had established himself in practice. She received him at St. Luke's and was with him through the operation and the few weeks that he remained there. It becoming necessary for her to return to the Virginia to complete her course, Dr. Faulkner was taken there, where she cared for him and, in June, passed her examinations and received her diploma.

Dr. Faulkner was then taken home, Miss Newton accompanying him and remaining with him until his death on February 6th, last. She gave him undivided attention until his general health was regained sufficiently to allow him to sit up in a rolling chair. His paralysis was never recovered from, as to the motor nerves, but sensation was regained almost completely.

Miss Newton secured work with a large Cotton Mill as Nurse. Her duties were to visit each family of the operatives daily and report the health and sanitary conditions to the mill authorities. On her rounds she, almost daily, came into contact with poor families living in the vicinity but not employed by the mills, who needed medical attention, but were not able to pay for it, and who needed medicines that they were not able to buy. Dr. Faulkner would have himself placed in the phaeton, they would drive the rounds and minister to the destitute sick. In many instances

they would buy the medicines and supervise the treatments. They never asked for nor received any pecuniary rewards but we know that they felt the happiness of contemplation of duties well done and we are constrained to believe that the recording Angel has a large credit to their account.

Dr. Faulkner kept up with the advance of medical knowledge by reading and the members of the family never had to have any other physician except for surgery.

Miss Newton is now Secretary and Office Assistant to Dr. Albert Parrott, of Kinston. She is a charming young woman of a most lovable disposition and is held in veneration by those to whose needs she and her fiance ministered for so many years.

TWELFTH NATIONAL RECREATION CONGRESS

Celebrating their increase from twelve to 711 during the first quarter of this century, cities of America which provide directed public recreation will send delegates to the Twelfth National Recreation Congress, meeting in Asheville, N. C., October 5-10, under the auspices of the Playground and Recreation Association of America. The 1925 Congress marks a milestone in the progress of the creative and health-giving play of the American people.

Not only city delegates, including recreation directors, recreation commissioners and other public officials, will be present. Business executives, club-women, physicians, clergymen, educators, social workers, writers and many others have attended past Congresses and this year they promise to be even more numerous because of the growing popular interest in and recognition of public recreation as a power in our national life.

The South welcomes the Congress for the first time since 1912, when Richmond was host. Asheville was chosen from a field of invitations presented by thirty cities, in thirteen states, Canada and Belgium. This was in recognition

of the strides the South has been making in public recreation and also of the facilities Asheville offers for the convention. As a result, Southern cities are already giving additional thought to multiplying their playgrounds and strengthening their recreation leadership.

The Congress will be an intensive training school, both practical and inspirational, where leaders in the recreation movement will pool their knowledge, discuss their problems and plan for the future. Some of the main topics to be considered are community drama, community music, athletics, rural recreation, the church and recreation, play space, outdoor camping, municipal golf and industrial recreation.

Six hundred men and women representing thirty-five states attended last year's Congress at Atlantic City, N. J.

PROGRAM NORTH CAROLINA SECTION AMERICAN COLLEGE OF SURGEONS, PINEHURST, N. C., 2 P. M., APRIL 27, 1925.

Dr. A. M. Whisnant, President,
Presiding

1. Hematuria From Above the Bladder, Dr. C. O. Abernathy. Discussion opened by Dr. Wm. M. Coppridge.
2. Further Observations on Kidney and Bladder Stones with Special Reference to Recurrence, Dr. Chas. O. Delaney. Discussion opened by Dr. A. J. Crowell.
3. The Relation Between Surgeon and Internist, Dr. A. T. Pritchard. Discussion opened by Dr. R. F. Leinbach. (By invitation).
4. The Relation of the Surgeon to the Roentgenologist, Pathologist and Follow-Up Record, Dr. G. Carlyle Cooke. Discussion opened by Dr. Fred C. Hubbard. (By invitation).
5. Stewart's Incision for Amputation of the Breast, Dr. D. T. Tayloe, jr. Discussion opened by Dr. J. T. Burrus.
6. Some Observations on the Intravenous Use of Mercurochrome, Dr. T. V. Goode. Discussion opened by Dr. Moir S. Martin.
7. Sarcoma of Testicle in Baby

Seven Months Old, Dr. C. M. Strong. Discussion opened by Dr. J. P. Munroe.

8. Bone Tumors, Dr. C. S. Lawrence. Discussion opened by Dr. W. Marvin Scruggs.

9. Report of Interesting Case of Head Injury, Dr. R. S. Beam. Discussion opened by Dr. J. F. Highsmith.

Dinner for Section Carolina Hotel, 7 P. M.

Executive Committee

Dr. A. M. Whisnant, Chairman.

Dr. E. S. Boice, Councilor.

Dr. J. W. Long, Secretary.

8 P. M.

1. Some Fundamentals in the Diagnosis and Treatment of Thyroid Diseases, Dr. Foy Roberson. Discussion opened by Dr. A. G. Brenizer.

2. Ventriculography and Ventricular Estimation, Slides, Dr. A. G. Brenizer. Discussion opened by Dr. J. P. Munroe.

3. Conditions Complicating the Acute Surgical Abdomen, Dr. N. D. Bitting.

4. The Clinical Significance of Gallbladder Symptoms, Dr. J. W. Tankersley.

5. Ruptured Gastric Ulcer, Dr. G. B. Crowell.

6. Sacral Nerve Block Anesthesia in Surgery and Neurology, Slides, Dr. J. D. Highsmith.

7. The Medical Journal a Necessary Adjunct to the Surgeon and the Hospital, Dr. Jas. M. Northington.

8. Preliminary Consideration in Connection with Provisions of the Duke Foundation for Hospitals, Dr. W. S. Rankin.

9. Crawford W. Long, the Discoverer of Surgical Anesthesia, Slides, Dr. J. W. Long.

NEW DAVIS HOSPITAL AT STATESVILLE

Construction has begun on the new Davis hospital here. The present building on South Center street, now occupied by the Davis hospital, not being large enough to accommodate the institution's constantly expanding patronage, a new fire-proof four-story

building, with rooms for 50 or more patients, is to be erected on West End avenue. The new structure, according to the proprietor, Dr. James W. Davis, will be of steel and concrete and fire-proof. It is to be located on a lot containing several acres, on one of the best residence streets, about three blocks west from the business section of Statesville. The large grounds, in a desirable residence locality, so close in, make the situation ideal for a sanatorium.

The new hospital will be complete with all departments necessary for the diagnosis and treatment of medical and surgical patients, including an eye, ear, nose and throat department.

The present hospital building will be used as an apartment house when it is vacated.—Charlotte Observer, April 8.

North Carolina Medical Society

Officers, 1924-1925

President—Dr. Albert Anderson, Raleigh.

First Vice-President—Dr. W. L. Dunn, Asheville.

Second Vice-President—Dr. A. E. Bell, Mooresville.

Third Vice-President—Dr. K. G. Averitt, Cedar Creek.

Secretary-Treasurer—Dr. L. B. McBrayer, Southern Pines.

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First District—Dr. H. D. Walker, Elizabeth City.

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Third District—Dr. E. J. Wood, Wilmington.

Fourth District—Dr. J. C. Grady, Kenly.

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Seventh District—Dr. T. C. Bost, Charlotte.

Eighth District—Dr. F. R. Taylor, High Point.*

Ninth District—Dr. M. R. Adams, Statesville.

Tenth District—Dr. W. J. Hunnicutt, Asheville.

Chairmen of Sections, 1925

Public Health and Education—Dr. L. J. Smith, Wilson.

Surgery—Dr. H. H. Bass, Henderson. Eye, Ear, Nose and Throat—Dr. H. L. Sloan, Charlotte.

(Secretary—Dr. R. V. Brawley, Salisbury.)

Gynecology and Obstetrics—Dr. B. C. Nalle, Charlotte.

Pediatrics—Dr. Leroy J. Butler, Winston-Salem.

Practice of Medicine—Dr. Frederick R. Taylor, High Point.

Chemistry, Materia Medica and Therapeutics—Dr. Henry L. Cook, Fayetteville.

N. C. Section of Medical Veterans and Medical Officers Reserve Corps, U. S. A.—Dr. W. L. Dunn, Asheville.

Delegates

To American Medical Association—Dr. H. A. Royster, Raleigh, 1923-1924; Dr. M. L. Stevens, Asheville, 1924-1925;

To Medical Society of Virginia—Dr. alternate—Dr. J. Q. Myers, Charlotte. Floyd P. Wooten, Kinston; Dr. E. S. Boice, Rocky Mount; Dr. W. W. Green, Tarboro; Dr. C. L. Sherrill, Statesville; Dr. L. G. Beall, Black Mountain.

To South Carolina Medical Association—Dr. J. O. McClelland, Maxton; Dr. Joseph E. Nobles, Greenville; Dr. J. B. Sidbury, Wilmington; Dr. J. T. Benbow, Winston-Salem.

Committees

Public Policy and Legislation—Dr. W. A. Monroe, Chairman, Sanford; Dr. A. A. Kent, Lenoir; Dr. J. V. McGougan, Fayetteville.*

Finance—Dr. A. C. Everett, Chairman, Rockingham; Dr. W. C. Ashworth, Greensboro; Dr. W. F. Hargrove, Kinston.

Obituaries—Dr. A. W. Knox, Chairman, Raleigh; Dr. C. F. Strosnider, Goldsboro; Dr. F. L. Siler, Franklin.

Scientific Work†—Dr. Wm. deB. MacNider, Chairman, Chapel Hill; Dr. C. A. Shore, Raleigh; Dr. E. J. Wood, Wilmington.

Memorial for the North Carolina Physicians Who Died in the Late War—Dr. J. P. Munroe, Chairman, Charlotte; Dr. A. J. Crowell, Charlotte; Dr. L. B. McBrayer, Southern Pines; Dr. J. M. Parrott, Kinston; Dr. J. T. Burrus, High Point.

Public Health Administration—Pres. State Board of Health, ex officio, Dr. J. Howell Way, Waynesville; Pres. State Board of Medical Examiners, ex officio, Dr. L. N. Glenn, Gastonia; Pres. North Carolina Hospital Asso., ex officio, Dr. C. M. Strong, Charlotte.

Committees

Constitution and By-Laws—Dr. C. M. Van Poole, Chairman, Salisbury; Dr. D. A. Garrison, Gastonia; Dr. Paul A. Ringer, Asheville; Dr. H. M. S. Cason, Edenton; Dr. C. W. Banner, Secretary, Greensboro.

Symposium (Eye, Ear, Nose and Throat)—Dr. H. L. Sloan, Chairman of Section (Chairman ex officia), Charlotte; Dr. O. P. Schaub, Winston-Salem; Dr. J. G. Murphy, Wilmington; Dr. V. M. Hicks, Raleigh.

Arrangements—Dr. W. C. Mudgett, Chairman, Southern Pines.

Place and Date of Meeting, 1925—Pinehurst, April 28, 29, 30.

*Appointed to succeed Dr. K. P. B. Bonner, resigned.

†Appointed in 1922 to serve for five years.

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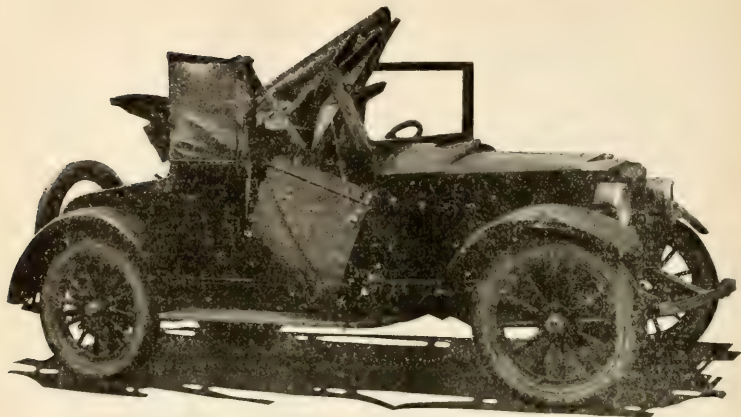
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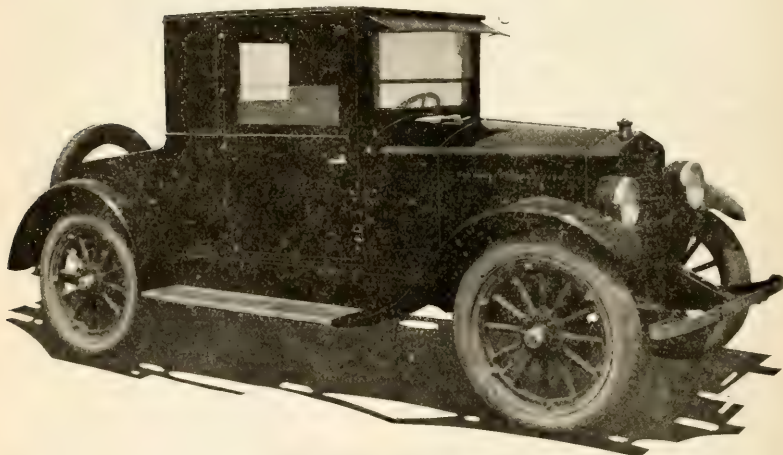
Dr. J. W. Long, Greensboro, N. C., will pay liberally for copies of the Transactions of the North Carolina Medical Society for the years 1877, 1878 and 1880.

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VOL. LXXXVII

CHARLOTTE, N. C. MAY, 1925

No. 5

A STUDY OF THE TOXIC EFFECT OF CERTAIN ALCOHOLIC BEVERAGES ON THE KIDNEYS*

Wm. deB. MacNider, M.D., Chapel Hill

Several years ago, perhaps three, I had some letters from several insurance companies, two in my state and one in New York State, in which they stated that they were interested in the fact that they were constantly getting applications from apparently healthy people, people whom they considered excellent risks, that were being turned down for insurance because they had, not a trace, but a very considerable amount of albumin in the urine. They seemed to be normal people, good risks in every other particular, but they would find, not a trace, but a marked amount of albumin in the urine, either without any casts or with very occasional casts. One of the North Carolina companies was in position to become interested in it and take it up in specific fashion with the different individuals and try to find out what it was, and, with what people it felt free enough to question closely about it, found out they were using a considerable amount of blockade whiskey. The question then came up, what was the real damage to the kidney and what was happening to those people, how serious it was? I think it is a question of considerable importance when we realize the enormous amount of such distillates that is being consumed all over this country, especially in the South. I can certainly speak definitely for North Carolina. So I took up the thing experimentally, with a group of dogs. They were given ten c.c. per kilogram of forty per

cent. solution of pure ethyl alcohol. It was given by stomach tube. (Incidentally, I had to give it by the stomach tube only two or three times; after that they were delighted to come to the pan). That would produce a moderate amount of intoxication, staggering gait, and the animal would go to sleep. That was done for a period varying from six weeks to three months. In those normal animals the urine remained negative. There may or may not be a trace of albumin in the urine. The elimination of phthalein was normal; no retention of urea or non-protein nitrogen. Four animals showed no evidence of renal disease that I could see. There was some stainable fatty material. The liver was large. In other words, I was surprised to find out that after three months of fairly well established alcohol intoxication each day, there was practically no evidence, either in the structure of the kidney or in function, of any damage. I then obtained the type of beverage which I was informed two certain gentlemen who had been turned down used freely, made by the fermentation of corn meal with yeast, etc. They were given the same quantity of this distillate that the control animals were given of the pure grain alcohol. The dogs developed a degree of intoxication comparable to the intoxication in the controls. After the third day we recovered, not a trace of albumin, but as high as seven grams of albumin. It is amazing. There was rarely a cast in the urine. The elimination of phthalein is normal. They do not have a retention of blood urea or non-protein nitrogen.

*Read before the 27th Annual Meeting of the Tri-State Medical Association, February 18-19, 1925.

In other words, the thing in the animal virtually duplicated the things the insurance companies had observed and were concerned about. At autopsy on these animals that had this distillate the findings, I think, were quite interesting. I have never seen the presence of stainable fatty material in the glomerular capillaries in the normal animal. At autopsy the kidneys appeared normal, so far as I could determine, with that one exception, that the glomerular epithelium and, to a less extent, the membranes surrounding it, was infiltrated with a considerable amount of fatty material. The explanation I have for this is that there is something in this distillate not in ethyl alcohol, because the ethyl alcohol did not do it in the control group, but whatever it is in the distillate injures the epithelium so as to promote the accumulation of fat, and it so alters the permeability of the epithelium that not only water can come through, but albumin comes through it, which might explain the enormous amount of albumin you find in such urines. Something like eighteen animals are now in the stage of recovery, and observations will be made later to determine whether there are any alterations in the kidney. Now, dogs have a chronic type of nephritis very often, and I have trouble getting normal dogs to work with. So I started another set of experiments in which the dogs with chronic nephritis were given this distillate and contrasted with the other two groups of animals. The results are these: in an animal with that type of chronic kidneys the distillate you obtain by fermenting this mixture I have mentioned is considerably more toxic than it is for normal dogs. They developed such an amount of albumin that you can not measure it in an Esbach albuminometer without buretting it. They become anuric, and die in coma or in convulsions. At autopsy on these animals you will not only find the same change in the glomeruli, this fatty change, but also find that the tubular epithelium has been changed. It is edematous. That leads me to believe that this type of epithelium is concerned in secreting certain urinary constituents.

In the normal dogs the one thing that makes them differ is the appearance of this fatty material, stainable lipid material, in the glomeruli. Is my explanation the right one? I do not know. We know this happens—the permeability of the structure is so changed that plasma albumin comes through along with the water. The explanation is this, and many of you physicians handling sick folks must have come across it—that distillates are injurious to the kidneys. Whether or not they will finally produce a chronic Bright's I do not know, but many an individual is going to be injured by the use of such a distillate. I do not suppose there is any way to control it. Here again you have a marked albuminuria, with normal output of phthalin and no retention of these substances in the blood. It may be that in other conditions the same thing happens, which permits the plasma proteins to come through. I do not believe these people are bad risks, if, of course, they would eliminate the thing that is causing it, because they have good renal function tests, and certainly in the acute development of the thing the real pathology is not of a severe character. Whether or not, when they undergo recovery, there is going to be an obliteration of the glomeruli, etc., I do not know. The thing is of marked laboratory and clinical interest and thought you would be interested in it.

The Surgeon General, U. S. Public Health Service, has issued general instructions to remove from the clinical record files as many of the used x-ray films of inflammable type as are not essential for record purposes. The storing of nitrocellulose films, especially when filed as a part of the clinical records, is, of course, well known to be a serious fire hazard and in conflict with the fire regulations of most cities. The material has a small sales value. The use of fire-resisting films which are not more inflammable than ordinary paper, and the storage of which, therefore, presents no special problem, was introduced in all Marine Hospitals on July 1, 1924.

HEART IRREGULARITIES AS RELATED TO MILITARY SERVICE*

Thompson Frazer, M.D., Asheville

There are two forms of irregularities that are commonly met with at the age of military service. These are: sinus arrhythmia and premature contractions (or extrasystoles, as they are less correctly called). Sinus arrhythmia is common in childhood, less frequent but still fairly common in early adult life; in fact, a slight degree of this irregularity can often be detected in a pulse of 75 or under. It consists of a gradual waxing and waning of the pulse rate, the heart beating more rapidly with inspiration, less rapidly with expiration; sometimes it is independent of the respiratory phase. It is an irregularity in which the whole heart partakes and is due to a variation in the activity of the vagus and its effect on the sinus or pacemaker; the rate of the heart is increased or decreased according to whether the vagus is less, or more active. This irregularity can be abolished by having the subject exercise so that the pulse rate is increased to 120. It is a benign irregularity and can be disregarded in the military service.

Premature Contractions

The normal rhythm of the heart is disturbed by a beat which occurs ahead of time and which is followed by a pause; these premature beats may occur only occasionally or they may be noted several times during the course of a minute. If the pulse is taken at the wrist there may be discovered a beat which follows closely upon a regular beat and which is succeeded by a long pause; but if the contraction of the ventricle does not open the aortic valve, or

sends only a feeble trickle through the radial, we will have a dropped or missed beat at the wrist. The importance of this is that it simulates one form of heart block. Again, if every other beat is premature we may be deceived into thinking that we have a bradycardia.

By listening at the apex we will hear (except in rare instances) one or both sounds of the premature beat which will distinguish this condition from heart block, in which the missed beat at the wrist is accompanied with absence of heart sounds. Lewis, in his book on "The Soldier's Heart" says that premature beats are without prognostic significance and that they too can be made to disappear if the rate of the heart be increased to 140 by exercise. While it is true that these cases appear to be free of cardiac embarrassment there are some that can not be so readily dismissed, especially those where the premature beats are frequent or multiple, that is, several occurring together. Pardee suggests that where they are only occasional and are readily abolished by means of exercise, they are probably not significant; but where the irregularity is more marked and when it is increased by exercise, we are very likely to have some pathological heart condition as the cause. In any case, then, the response to exercise is the best test for the fitness of the soldier.

One might occasionally come across a case of auricular fibrillation, and, while such cases are obviously ill, they may be further characterized as follows: The pulse is usually rapid, 120 or over, it is very irregular, and remains irregular despite exercise. Such subjects are not fit for military service.

*Read before the Seventy-second Annual Meeting of the Medical Society of the State of North Carolina, Pinehurst, April 28 and 29.

ECLAMPSIA*

Brodie C. Nalle, M.A., M.D., F.A.C.S., Charlotte

My subject is older than the father of medicine, and since his time the discussion of the etiology and mode of treatment of eclampsia has continued without a definite conclusion as to the cause, and with still greater diversity of opinion as to the best method of treatment. However, there is no longer any reason for discussion of the importance and efficiency of the preventive treatment, neither is there longer any doubt as to the duty and responsibility of the physician in charge nor of the value and importance of the education and co-operation of our patients in this matter of preventive treatment.

The object of this paper is to arouse more enthusiasm in the preventive treatment of eclampsia and to add converts to the conservative method of treatment of those unfortunate or neglected cases who go to the eclampsia stage.

The best treatment of eclampsia is the preventive treatment and this is procured by a vigilant intelligent prenatal care.

Eclampsia has been defined as the culmination of a toxemia of pregnancy which has advanced through two stages, mild and severe. In other words, eclampsia should not be considered as a "Bolt from a clear sky" as is frequently claimed, but is a disturbance which has its premonitory signs and symptoms, which if intelligently interpreted should warn of the approach and render possible the prevention of this horrible and dangerous disease. These pre-eclampsia symptoms may come on slowly or rapidly and may be of varying degrees of severity, and statistics of the results of any method of treatment should consider these facts.

The time has arrived when the obstetrician, who has cases of eclampsia, will be severely criticised for his ignor-

ance or indifference, unless the opportunity of observing and the co-operation of the patient has not been afforded him.

Although the etiology is not definitely known it is interesting to know that Dr. J. S. Lawrence of Philadelphia, through the careful study of 1,708 obstetrical cases, has found that there is a relation of various extraneous diseases and subsequent organic defects to the occurrence of eclampsia. He finds that the diseases contracted previous to pregnancy which appear to render a woman liable to eclampsia are the general infections—such as influenza, pneumonia, acute inflammatory rheumatism, scarlet fever,—and that women with organic defects originating previous to pregnancy,—such as cardiac, renal and intestinal defects,—are especially liable to eclampsia. If these facts be true, the importance of a more carefully taken history and physical examination as early as practicable, should be all the more emphasized and valuable in putting us on our guard for the detection of toxic symptoms in cases giving such histories and showing such physical defects.

Eclampsia is said not to occur in lower animals and to have been exceedingly rare in the primitive races. So it is suggestive that civilization is playing some part in the etiology. Eclampsia is more frequent among inhabitants of cities than among those living a quieter more natural life in the country. It is more frequent among those who eat proteins and fats excessively. This fact was demonstrated during the world war when it was noted that eclampsia was less frequent among German mothers who were denied their usual portion of meat. It is more frequent among primiparae than multiparae, a possible explanation of which is that primiparae are naturally more fearful of the dangers and difficulty of labor with a consequent greater excitement and stimulation of their sympathetic

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nervous systems which interferes with carbo-hydrate metabolism, and since protein and fat metabolism is directly dependent on carbo-hydrate metabolism, the result would be a faulty fat and protein metabolism which Sellheim thinks is the most important factor in the production of eclampsia. Is it not possible that the sympathetic nervous system, which is becoming more unstable, more easily excited with the advance of civilization, is one of the explanations of eclampsia occurring more frequently in the more civilized races?

How then is the way to improve the present status of eclampsia?

First is to realize that eclampsia is in the very great majority of cases preventable, and that to accomplish this, it is necessary for us to be familiar with pre-eclampsia symptoms, such as albuminuria, increase in systolic blood pressure and slight edema in the mild cases; increased albuminuria, further increase in systolic blood pressure, marked edema, headaches, gastric pains and retinitis, one to all, in the severe cases.

Secondly, a concerted effort to educate the public and expectant mothers to the importance of being under the early and continuous care of a physician, and of the necessity of full co-operation with the physician.

Third, careful physical examination and history of our patient and frequent observation of the patient.

Fourth, the heroic treatment of pre-eclampsia symptoms by diet, elimination, rest in bed if necessary, and by the early induction of labor if not amenable to treatment, before reaching the dangerous convulsive stage.

It has been shown from several large clinics that the duration of toxemia plays the important part in the number of permanently affected kidneys, rather than the severe cases of shorter duration, and that the percentage of permanently damaged kidneys in protracted cases of toxemia of pregnancy amounts to 60 to 70 per cent.

When we consider the increased maternal mortality and the large number of cases left with permanent kidney affections caused by delay, does it not jus-

tify us in inducing labor early with assurance of saving practically all the mothers, who may later bear other children, rather than waiting for development of alarming symptoms with the consequent maternal mortality and permanent kidney conditions?

Should preventive treatment have been neglected or failed, and we find ourselves confronted with eclampsia, the question of which mode of treatment to be followed has to be decided, whether by immediate and forcible delivery without regard to the condition of the patient or of the cervix, or whether by the conservative method which means treating the patient medically with the aim of controlling the convulsions, increasing eliminations and waiting for the natural dilatation of the cervix, and delivery; or, if nature does not accomplish this, to induce dilatation and delivery by milder means when the condition of our patient justifies our interference.

The advocates of immediate delivery base their position on the fact that pregnancy induced the disease and that the quickest way to cure is to remove the cause by emptying the uterus. This may be theoretically good, but it is not in practice because:—First—Emptying the uterus does not stop the convulsions in at least 25 per cent of cases. Second—The eclamptic is a bad surgical risk in the most skilled hands and under the best hospital conditions, and a perilous risk in unskilled hands and under less favorable conditions. These cases are more liable to pneumonia following general anesthesia; acidosis is increased; degeneration of the liver is more prone to occur.

The argument for the conservative method rests on the fact of its results. It is gratifying to note in recent literature that the tide has rapidly turned to the conservative method, and that statistics from various obstetrical clinics show that their results have been greatly improved by the adoption of the conservative method.

Zweifel was an enthusiastic follower of the radical method and practiced it from 1900 to 1911. From 1911 to 1921

he practiced the conservative method with a lowering of maternal mortality from 18 1-2 to 8 1-2 per cent.

Report from Johns Hopkins shows that from 1894 to 1912 the radical method was used, and from 1912 to 1924 the conservative method was used. The mortality by the conservative method was only half that by the radical method and with only a negligible increase in the infant mortality.

From the Charity Hospital in New Orleans comes the report that they have discarded the radical for the conservative method with gratifying decrease in their mortality. Various similar reports can be added.

It is true that there is no unity of plan of treatment even among the conservatives, but they all agree upon the main question. They oppose any forcible interference, and differ only in their methods of controlling convulsions, and in the means of producing elimination.

The various methods are known as:

1. The veratrum method which has been discarded by the majority of obstetricians.

2. Method of Stroganoff, who deserves the credit for the first definite plan of conservative treatment, and who uses morphine, chloral hydrate, chloroform and venesection.

3. Ross McPherson relies entirely upon morphine for the control of convulsion.

4. Rotunda method which depends upon the vigorous lavage of stomach and colons.

The scope of this paper does not permit the discussion of the relative merits of the various methods of conservative treatment. The adoption of the most practical points in the various treatments will appear to be the best means of procedure.

The following routine seems the practical one, and has proven satisfactory one in my hands:

1. A quiet room with a constant attendant.

2. A mouth gag during convulsions, and position of the patient to prevent aspiration into the lungs.

3. Morphine for the control of convulsions.

4. Gastric and colonic lavage under nitrous oxide anesthesia.

5. Purgation.

6. The use of chloroform (questionable).

7. Glucose and insulin following venesection.

8. The possible use of magnesium sulphate for the control of convulsions.

Of interest are articles in the February number of American Journal of Obstetrics and Gynecology on the control of eclamptic convulsions by intraspinal use of magnesium sulphate by Drs. Alton and Lincoln, Worcester, Mass., and of intravenous use of magnesium sulphate by Dr. Lazard of Los Angeles, each of which methods has given most encouraging and wonderful results.

The use of glucose and insulin in toxemia of pregnancy, according to Dr. Paul Titus, is of great benefit in its protective action on liver.

To me the important question to be decided is between the radical and conservative methods, and of secondary importance is the decision of which of the conservative methods is to be followed. Either conservative method has shown better results than the radical.

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A REVIEW OF THE PATHOLOGY AND SURGICAL TREATMENT OF PEPTIC ULCER*

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Peptic ulcer occurs in only those portions of the alimentary tract exposed, or liable to be exposed to the digestive action of the gastric juice; viz—the stomach, the duodenum (especially the first part), the esophagus (especially its lower third) and the jejunum (following gastro-jejunostomy). In the stomach and duodenum peptic ulcer is common. Matthew J. Stewart, in 15,000 autopsies, found open ulcers in 8.7 per cent. Chronic ulcer is more common in the duodenum than the stomach, Moynihan gives the relative proportion as three to one, and Mayo four to one. Jejunal ulcers occur in less than one per cent of all cases of gastro-enterostomies, as estimated by Deaver and Ashhurst, by Mayo 2 per cent. Peptic ulcer of the esophagus is very rare, but acute antemortem digestion and erosion is not uncommon.

Pathologically peptic ulcer occurs in the acute and chronic forms. Chronic ulcer simply represents an unhealed acute ulcer. There are thus varying grades of chronicity and it is possibly well to include an intermediate form, the subacute peptic ulcer. The degree of chronicity is pretty well indicated by the amount of fibrosis present in the ulcer base.

Acute Peptic Ulcer

Acute ulcers of the stomach and duodenum are least understood, perhaps because they are so rarely seen except at the postmortem table. In the earliest stages, an acute ulcer presents itself as a quite superficial, necrotic lesion of the mucosa, with slightly reddened margins and little or no excavation. Later, as the ulcer deepens by digestion and removal of slough, tiny vessels are exposed in the floor, which then becomes covered by a thin black layer of alter-

ed blood, or of slough infiltrated with blood. Later still, the black slough separates, leaving a clean smooth floor in which all hemorrhage has ceased, as a result of thrombotic obliteration of the exposed little vessels. The ulcer now presents the well known punched-out appearance.

Acute ulcers are considered by some pathologists as multiple, especially in the case of the stomach. These ulcers may vary in size from small superficial erosions to large and deeper ulcers measuring an inch or more in diameter. In general it may be said that the more numerous the ulcers, the smaller their size. Some authors believe there is no dividing line between the so-called multiple hemorrhagic erosions, and acute ulcers of larger size.

Acute ulcers of small size and many larger ones, are confined to the mucosa and submucosa, and at least in the post-mortem room it is quite exceptional for them to give any indication of their presence on the peritoneal surface. It is quite rare for an acute ulcer of the stomach or duodenum to perforate the wall of the viscus, but on the other hand, it is a fairly common cause of the less severe forms of gastric or duodenal hemorrhage.

Naturally acute ulcers tend to heal readily and rapidly, and, if they involve only the mucosa and submucosa, they may do so without leaving a scar. If the muscular coat is involved, a certain amount of fibrosis or scarring will take place, which is sometimes visible to the naked eye. In a certain proportion of cases one ulcer, rarely more, fails to heal with the rest. It persists, slowly enlarges, becomes first subacute, then chronic.

Chronic Peptic Ulcer

In contra-distinction to acute ulcers, chronic ulcers of the stomach are single. It is very rare for two independent

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chronic ulcers to co-exist. However it is, on the other hand, not uncommon for a chronic ulcer to be accompanied by one or more acute ulcers, a fact which is of importance in relation to the well known recurrent character of the symptoms in these cases. In the duodenum, double chronic ulcer, anterior and posterior, are fairly common. Here also acute and chronic ulcers may co-exist.

The great majority of chronic gastric ulcers occur along the lesser curvature or in close proximity to it, and especially in the pyloric three-fifths of the organ. On the other hand chronic ulcer rarely arises exactly on the pylorus, and it is by no means common in the prepyloric region, i. e., within an inch of the pyloric ring. (For determining the exact location of chronic gastric ulcers, Matthews analyzed 125 cases coming to autopsy. He found 91, or 73 per cent on the lesser curvature including about an inch of the gastric wall on each side, but stopping short an inch of the pyloric sphincter. Five, or four per cent involved the pyloric ring, seventeen, or 13.5 per cent in the prepyloric inch, three or 2.5 per cent in the rest of the anterior wall, and 9, or 7 per cent, in the rest of the posterior stomach wall. In this series there were no ulcers close to the cardiac orifice).

In the duodenum chronic peptic ulcer is practically limited to the first part of the viscus—and according to some autopsy reports is more frequent on the anterior wall. Those on the posterior wall, often by extension, finally involve either the superior or inferior wall, or perhaps both. Double ulcer in this part of the gastro-intestinal tract is comparatively frequent.

Gastric ulcers usually attain a larger size than the duodenal. A chronic gastric ulcer varies in size from under one-half inch in its greatest diameter, to even as large as four or five inches; the duodenal ulcer from one-half to rarely larger than two inches. Chronic ulcers usually have, in the active state, thickened, rounded, and overhanging margins. In callous ulcers the margins are flatter, although still undercut, while in healing ulcers the margins are

flattened with the epithelium in most cases obviously growing inwards over the floor. In the active ulcer a narrow zone of sloughing with inflammatory exudation is almost invariably present in the floor, sometimes in patches, sometimes all over. In both callous and healing ulcers the floor is clean and fibrous.

The shape of the ulcer crater varies. In the stomach it is usually deep, and globular, or deep with a flat floor in the medium or moderate size ulcer. Smaller ulcers may be slit-like, owing to the overhanging margins coming in contact. Very large ulcers and callous ulcers generally tend to be flat, with low, often undermined margins, and a smooth or nodular floor. Such ulcers are often of the so-called "saddle" type, lying across and at right angles to the lesser curvature. In these, as in the large posterior wall ulcers generally, whether gastric or duodenal, part of the floor is formed by the pancreas. Healing ulcers flatten out more and more as marginal epithelialization progresses.

One of the most constant features of chronic peptic ulcer, whether of the stomach or duodenum, is penetration of the muscular coat. Perforation is prevented mainly by the great fibrous tissue barrier formed in the floor, less often by adhesions to the pancreas, liver or gall bladder. Pads or fat, always more or less fibrosed, are commonly found reinforcing the floor of gastric and duodenal ulcer, except in cases where the ulcer occupies an anterior position and is not contiguous with either omentum or the retro-peritoneal tissue.

It is important to recall that ulcers of great chronicity, particularly in the stomach, may reach a remarkable size. This is due to inflammatory thickening and extensive fibrosis in and around the ulcer crater. These ulcers may be felt in the epigastrium as palpable tumors, leading to erroneous diagnosis of cancer. Even at operation, the mass may be so extensive as to make it difficult and even quite impossible to distinguish the benign lesion from one of cancer. As a rule, however, the peritoneal as-

pect of a simple chronic ulcer is fairly characteristic. There is thickening and opacity of the serosa, as a result of fibrosis and edema, together with vascular congestion, often intense, and not infrequently areas of hemorrhage in cases where the ulcer is in an active state. While radiating lines or fibrosis run outwards from the margin of the ulcer, and there is often a vascularized, soft, adhesion to some adjacent structure. The floor of the ulcer may show fine, reddish stippling, owing to the numerous small, thin-walled vessels in the newly formed fibrous tissue.

In old completely healed ulcers, the stippling, congestion, and hemorrhage disappear and the floor of the scar becomes white and sclerotic, with radiating marginal lines of fibrosis much in evidence. In large scars, as well as in large chronic ulcers, there may therefore be a great deal of cicatricial puckering and deformity.

In cancer of the stomach, the peritoneal aspect of the lesion is different. Here the wall of the organ is being infiltrated from the mucosal side by the firm nodular tumor tissue, which by the time the patient comes to operation has usually involved the peritoneum. The most important single feature in differentiating simple ulcers from carcinoma is that in the latter the growth is sharply outlined at the margin both to sight and touch, whereas the fibrosis of the benign lesions merges imperceptibly in the surrounding tissue. There is also little or no congestion, hemorrhage or edema in the tissue about a carcinoma. The lymphatic glands, which are infiltrated by carcinoma, are usually hard and shotty: lymphatic enlargements due to infection from chronic ulcers are softer and more "succulent." Carcinomatous changes in the margins of chronic ulcers may present an impossible differentiation except by means of the microscope.

Blood vessels in the walls of the stomach may be implicated in various ways by the ulcerative process. In early acute ulcers these small vessels may be simply opened into, resulting in more or less hemorrhage, or oozing. If

the artery or vein is of large size the hemorrhage may be profuse, and rarely fatal. On the other hand, the vessels will often be found to be plugged with thrombi or fibrinous exudates. In chronic ulcers, there is often an additional feature seen, namely, a well marked end-arteritic, and endophlebitic thickening causing a narrowing of the vessel lumen. In cases of fatal hemorrhage the open end of the vessel can almost always be found on the floor of the ulcer. It has most often been the erosion of the larger arteries, or veins, such as the coronary, the splenic, or gastro-epiploic, the pancreatico-duodenal, which have been the causes of fatal hemorrhages. In a few instances the liver, or spleen have been sources of the hemorrhage, having been penetrated by the ulcer. In the duodenum, profuse hemorrhage is almost invariably due to ulcer of the posterior wall; in the stomach, to ulcer of the posterior wall or lesser curvature. In the floors of chronic ulcers with histories of repeated hemorrhages it is sometimes possible to find the obliterated ends of several arteries projecting in the floors.

The results of chronic ulceration may be said to follow one of three courses, either the ulcer heals, or perforation occurs, or carcinoma develops in the margins. That many ulcers heal spontaneously or medically is demonstrated by the scars, both gastric and duodenal, found in the post-mortem room and at the operating table during the course of operations for other conditions. The mechanical derangement as result of healed ulcers, as the various forms of stenosis in the stomach and duodenum, depends on the size, the chronicity and situation of the ulcer. A relatively small ulcer near the pylorus may cause a marked degree of stenosis by contraction of the scar. In the body of the stomach it is usually only the large ulcers which produce the hour-glass deformity. Here small ulcers may heal satisfactorily.

It must be remembered that even though an ulcer heals completely, there is always the possibility of a new ulcer developing in another part of the stom-

ach. An explanation of the recurrent character of the symptoms of chronic peptic ulcer has been believed to be come about in one of two ways; either by the breaking down of an old scar, or by the ulcer becoming callous or quiescent, with subsequent recrudescence of the ulcerative or inflammatory activity. The first is difficult of proof, but the second can be convincingly shown by both surgeons and pathologists.

The second result of ulcers may be perforation of the viscus either acute or chronic. In the acute form it is one of the most serious complications of gastric and duodenal ulcers. It is due to a sudden sloughing of a part of the whole of the peritoneal floor, due to a slow devascularization and may be large or small. When small it may be concealed and partially occluded by plastic exudates and adhesions. Acute perforation is perhaps more common in the duodenum. In gastric ulcer there are more instances of chronic perforation. In these cases the process of perforation is very slow, there is ample opportunity for the formation of limiting walls of adhesions so that when the peritoneal floor finally gives way the ulcer opens into a sort of performed cavity. This gives origin to the secondary pockets, or accessory pockets, so often seen, and more rarely to perigastric abscesses. In chronic perforations the extra-gastric mass may reach considerable proportions, due to the dense and widespread inflammatory thickening and fibrosis.

The results of perforation of course depend on the size of the aperture, the presence or absence of limiting adhesions and exudates, and whether or not the stomach is full or empty at the time of rupture. The infection from the perforation may because of the limiting adhesions tract in various directions—sometimes upward beneath the liver and diaphragm, producing subdiaphragmatic abscess, or downward behind the colon to the right iliac region, suggesting appendicitis, and into the pelvis. Localized abscess may at any time rupture into the general peritoneal cavity, and rarely into the pleural cavity or an

adjacent hollow viscus. When the opening in the stomach or duodenum is large, and the stomach is full of material, and there are no limiting adhesions, widespread general peritonitis is the result.

Thirdly, chronic peptic ulcers may undergo malignant degeneration. This, however, is so rare in the duodenum as to be almost unknown. In the stomach it has been considered a frequent occurrence, but at the present time there seems to be a tendency to discount or discredit the reality of this change. There is a growing opinion that carcinomas in most instances begin as cancers, and later probably ulcerate, especially since there are some forms of cancer of the stomach which commonly pursue a slow, and inactive course. At least at the present time this is a question that is open to controversy.

Surgical Treatment

Up to the present time there is no entirely satisfactory surgical treatment of chronic peptic ulcers. Acute ulcers are always essentially treated by medical means. While the principles of surgical treatment are becoming quite generally accepted, surgeons are not in complete agreement as to the best method to be employed in chronic peptic ulcers. Balfour thinks this is fortunate since the differences of opinion will bring out the truth more rapidly than will blind adherence to a standard method. At the outset, it is important, as suggested by Balfour, to consider duodenal ulcer and gastric ulcer as two distinct entities, and what is suited to one may not be so, to the other. Experience, judgment, and great care therefore are necessary in order to employ that type of operation which will so meet the indications of the individual case as to more nearly insure a complete relief from the symptoms. The selection of the operative method then must be founded upon such actual conditions as the size, situation, character and complications of the ulcer. An operation which may be clearly indicated for one ulcer may be quite ineffective for another. Further, there is rather a growing tendency in this country, if not

among the surgeons abroad, to exercise conservatism and oppose the more radical methods of sacrificing large portions of normal stomach for the sole purpose of removing a small ulcer by gastric resections. At least the feeling is that if the more radical methods are to be employed the ultimate results must be so far superior to those of similar methods that the final good is great enough to justify the added risk. As yet this has not been so. Of recent date there has been a great deal of blame and criticism placed upon the more conservative operations, particularly the gastro-enterostomy, by surgeons who practice radical resections. In this connection permit me to quote a statement of W. J. Mayo of August, 1924, "One must however protest against the exaggerated emphasis placed on the defects of gastro-enterostomy as a reason, or, one might say, an excuse for performing extensive operations in which a large amount of the stomach is removed, because gastro-enterostomy occasionally fails to give the relief expected. To remove primarily two-thirds of the stomach for a gastric ulcer less than 1 cm. in diameter because 10-15 per cent of gastro-enterostomies fail to relieve, or give rise to secondary disorders, all of which are curable, is radical to say the least. How much more radical it is in cases of ulcer of the duodenum, to remove two-thirds of the uninvolved stomach because 6 per cent of gastro-enterostomies for duodenal ulcer fail to give relief." Chas. Peck, almost at the same date states his opinion in regard to the radical measures of resection as follows, "We cannot subscribe to the recent wave of enthusiasm for these radical methods, viz—removing a considerable portion of healthy stomach for the purpose of getting rid of small uncomplicated duodenal ulcers."

In the treatment of chronic duodenal ulcer, gastro-enterostomy still has a number of enthusiastic advocates, Mayo, Peck, Deaver and others, and will effect a cure of the ulcer in 80 to 94 per cent of the cases, by the estimates of these various authors. Great emphasis, however, is placed upon the necessity of a

technically accurate gastro-enterostomy in order to obtain these results. Mayo estimates that of the 6 per cent of failures to relieve duodenal ulcers by gastro-enterostomy, fully 2 per cent of these are due to technical errors in performing the operation. The most common faults are, a gastro-enterostomy that is placed too high and too far to the left, failure to expose sufficient area of the posterior wall of the stomach through the opening in the transverse mesocolon, too small an opening in the mesocolon, which tends to angulate the anastomosis, and prevent proper drainage of the stomach. "If the opening in the transverse mesocolon is made large and is fastened securely to the posterior wall of the stomach, so that the posterior gastric wall will funnel through at the site of the gastro-enterostomy, such complications will not often occur." (Mayo). If the ulcer is the bleeding type, or easily accessible, local excision by knife or cautery should be added to the gastro-enterostomy. If the ulcer is very large, and rather inaccessible, some surgeons perform a pylorotomy, followed by a gastro-enterostomy, or the small intestine is united to the open end of the stomach by some one of the approved techniques. However, the need for restoring to this more radical operation is not often called for, gastro-enterostomy with or without excision of the ulcer, properly performed giving as good results as any method yet introduced.

Another 2 per cent of the failures of gastro-enterostomy is due to the occurrence of jejunal ulcer. It has been thought that this frequency can be reduced by not using unabsorbable suture material in the suture line. The best plan in these cases is to cut off the gastro-enterostomy, and perform some type of pyloroplasty, after excision of the original ulcer. Or perhaps it may be better to perform a partial gastrectomy. The failure of the conservative operation is then good reason for resorting to more radical measures, since only in this way can the acid secretions be eliminated, which do surely play a part in the development of ulcer. Certainly all

cases should not be subjected to the hazards of a radical operation in the beginning because 2 per cent develop gastro-jejunal ulcer. Deaver and Ashhurst estimate their occurrence of jejunal ulcer even lower, one per cent of all cases.

The pyloroplasties of Finney and Horsley when properly indicated will yield good results in the treatment of chronic duodenal ulcer. Either will prove a valuable substitute for gastro-enterostomy when, because of posterior adhesions or other complicating conditions, the gastro-enterostomy is not possible. With the performance of the pyloroplasty is included the excision of the ulcer. The pyloroplasties have one great advantage in that they retain more nearly the physiologically normal relationship between the stomach and the small intestine, and for this reason in the long run are thought to give better results than the gastro-enterostomies, because in the latter stomach digestion is at least hastened, and the stomach contents are rather prematurely dumped into the small intestine. To perform the pyloroplasty of Finney, the duodenum must be mobile, and not bound down in adhesions. Finney believes the further advantages of his operation are that it always affords opportunity to excise all anterior wall ulcers, also allows direct inspection of the part, and permits application of treatment to ulcers of the posterior wall. Relief of symptoms is estimated at from 93 to 95 per cent of operated cases.

In chronic gastric ulcers the problems of treatment are more difficult. Gastric ulcers yield less readily to treatment than do duodenal. Here again gastro-enterostomy, always with local excision when possible, will give 85 per cent of cures. Usually destruction or removal of the ulcer is necessary regardless of the method used. Simple gastro-enterostomy alone is not as a rule satisfactory. No less a surgeon than Sir

Berkeley Moynihan invariably prefers partial gastrectomy and union of the end of the stomach to the small intestines in these cases, as the most reliable method of obtaining relief for the patient. Sleeve resections are performed by some surgeons when the ulcer is in the body of the stomach, but are considered unsatisfactory by this same author. Simple local excisions may in rare cases be satisfactory, but too often result in crippling the motor power of the stomach. Both of these operations may result in hour-glass contraction of the stomach. Posterior ulcers in the body of the stomach may present exceptional difficulties, and may be attacked by transgastric excisions, or sleeve resection.

When there is a chronic perforated gastric ulcer with a very extensive inflammatory mass possibly with occlusion of the pylorus, and a patient in whom the surgical risk is poor, a gastro-enterostomy should be done as a primary operation. Later if the ulcer persists and does not heal, when the patient is in an improved condition, partial gastrectomy may then be done.

For the mechanical complication of pyloric obstruction due to cicatricial contraction, the gastro-enterostomy gives brilliant results. In hour-glass contractions of the stomach due to the contracting scar of a healed ulcer a double gastro-enterostomy performed upon each of the two loops as suggested by Gibson gives good results. If this is not practical, segmental resection of the stomach is necessary.

In closing, I would say that the best results are to be obtained in the surgical treatment of gastric and duodenal ulcers by a careful choice of the operative measures for each individual case, by applying established principles, and always exercising conservatism where simpler methods, properly performed, offer satisfactory prospects.

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A REVIEW OF THE METABOLISM OF THE CARBOHYDRATES*

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The introduction of insulin as a therapeutic agent in the treatment of diabetes mellitus and other conditions as well has focused attention on the metabolism of the carbohydrates. It seems desirable, therefore, to review our knowledge of this important subject.

The study of the dietetic treatment of diabetes has brought to light the metabolic inter-relationship between the carbohydrates, proteins, and fats. When carbohydrates are entirely excluded from the diabetic diet sugar continues to be excreted in the urine, though in reduced amounts. On an exclusively protein diet it was found that for each 100 grams of proteins the totally depancreatized animal excreted 58 grams of sugar, the nitrogen-dextrose ratio in the urine being constantly one to 3.65. On an exclusively fat diet the animal also continues to excrete sugar, a part of which is formed during the metabolism of the tissue proteins and a part from the glycerine of the fats. By calculation each one hundred grams of fat will yield 10 grams of sugar. Therefore the normal individual living on a standard Voit diet consisting of 120 grams of proteins, 500 grams of carbohydrates, and 50 grams of fats, the total heat value of which is approximately 3,000 calories, about 75 p. c. of the heat of the body will be derived from the metabolism of the carbohydrates.

The acidosis of diabetes, characterized by the appearance of the "ketone bodies" (beta-hydroxybutyric and diacetic acids and acetone) in the urine, with a depletion of the alkaline reserves and an ultimate change in the reaction of the blood towards, though never actually reaching acidity, is the immediate result of a faulty fat metabolism, brought about by an inadequate carbohydrate

metabolism. A somewhat similar condition may result in the dietetic treatment of obesity if one is unmindful of the danger of an excessive fat metabolism. "The fats are burned in the heat of the carbohydrates." Shaffer has demonstrated a definite quantitative relationship between the ketogenic substances (practically the fats) and the antiketogenic substances (practically glucose) of I:I, or for practical dietetics one gram of glucose for each two grams of fats. This ratio will hold for the normal individual as well as for the diabetic.

Quantitatively as well as qualitatively, therefore, the metabolism of the carbohydrates is of the first importance. Without it more than one-half of the food value of the proteins will be lost and the metabolism of the fats breaks down with the production of acid bodies which directly threaten life.

The three common food carbohydrates, starch, cane sugar, and milk sugar, are, in process of digestion, converted into glucose. (The levulose and galactose formed in the inversion of cane sugar and milk sugar respectively may be disregarded). The absorbed sugar is transported to the liver in the portal blood and is converted into glycogen and stored in the liver cells. Later the glycogen is converted into glucose.

Glycogenesis and glycogenolysis are the first stages in carbohydrate metabolism, and McLeod holds the view that they are essential changes for all subsequent stages. While glycogen may be found in all active tissues except perhaps the nervous tissues, it is most abundant in the liver and muscles. Glycogen is the stored form of the carbohydrate in the animal body. It is stored in the muscles as a source of energy and used for this purpose. In the liver, however, it has quite a different purpose. Glycogenesis in the liver pre-

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vents an excess of sugar from entering the blood during the period of alimentary absorption. In the normal individual a hundred or more grams of glucose may be fed by the mouth without increasing the blood sugar by more than a trifling amount. The significance of this function of the liver is more fully appreciated when it fails, as it may do in the so-called alimentary glycosuria and in all stages of true diabetes as well. On the other hand, glycogenolysis, which takes place especially during the inter-absorptive periods, protects the blood from a too low sugar content, a hypoglycemia, which, as we have learned from experiences with insulin, is a matter of even greater importance. The glycogenic and glycogenolytic function of the liver may be altered in one direction or the other. In hypothyroidism (cretinism) and in hypopituitarism (Froelich's disease) glycogenesis is so accelerated that very large quantities of glucose may be fed by the mouth without producing a glycosuria; the sugar tolerance is enormously increased. On the other hand this function is deficient in all stages of diabetes mellitus. Glycogenolysis is increased in anesthesia, in emotional glycosurias, and glycosurias from nervous disorders, in the punctate diabetes of Claude Bernard, in hyperthyroidism, in hyperpituitarism, and following the injection of adrenalin and pituitrin. Carbohydrate metabolism may therefore break down at this stage.

In the blood the normal range of sugar lies between 90 and 120, the average being about 100 milligrams to the 100 c.c., or 0.1 p. c. While there are probably no metabolic changes of consequence in the blood the presence of sugar, even in so small an amount, is a matter of vital importance. An excess as seen in diabetes will stimulate the island cells of the pancreas and, if persistent, will lead to exhaustion and ultimate degeneration of the secreting cells. Moreover, an excess affects the normal functioning and particularly the resistance of all body cells. On the other hand, a hypoglycemia (75 milligrams or less per 100 c.c.) as previously mentioned, may bring about hunger, sweating, nervous irrita-

bility, finally convulsions and death, a symptom complex which we have come to know as "insulin shock."

The final stage in carbohydrate metabolism is an oxidation which takes place in all active tissues, but particularly in the muscles. In the normal individual this is complete, the end products being carbon dioxide and water. We cannot assume that the burning of the sugars, the glycolysis, occurs in the body as it does in a flame, though the end products are the same,—rather that it is a progressive process with a number of intermediate compounds formed between the beginning and the end.

The intermediary metabolism of the carbohydrates is imperfectly understood. Upon purely chemical grounds a simple scheme for a progressive oxidation of glucose with a number of intermediary acids, glycuronic, saccharic, lactic, pyruvic, acetic acids, acetaldehyde, and finally carbon dioxide and water may be conceived and justified on the ground that comparable changes are brought about by the action of bacteria or certain yeasts or molds, but whether glycolysis in the body actually follows this simple procedure is very doubtful. Only two of these intermediary acids are known to occur in the body. First, glycuronic acid, which is found occasionally in the urine paired with some of the toxic products of intestinal putrefaction, indol, skatol, and the like, but there is no substantial proof that its occurrence indicates the normal course through which glucose passes. Second, lactic acid, which is so constantly present during glucose metabolism and is so constantly increased under condition in which there is an increased metabolism of glucose that we cannot escape the conviction that it is a constant intermediary in the metabolism of glucose; in fact that problem of intermediary carbohydrate metabolism centers around the steps that lead up to and follow the formation of lactic acid. The problem is still very far from being satisfactorily solved, and it seems undesirable for us to attempt to outline the various theories which have been proposed. It is, however, safe to say that until lactic acid is form-

ed, very little of the heat of the carbohydrates has been set free. Moreover, it seems clear that only a fraction, perhaps only a fifth of the lactic acid formed is actually oxidized, but the larger part reverts to sugar or glycogen.

In 1885 Von Mering and Minkowski demonstrated that removal of the pancreas from an animal was immediately followed by diabetes. Laguesse and Diamare, and later Bensley, definitely established the relationship between such a diabetes and the islands of Langerhans in the pancreas. Opie and other pathologists described histological changes in the island cells in individuals dying of diabetes, and in 1922 Banting and Best discovered insulin, the missing link in the chain of evidence that the islands of Langerhans secrete an internal secretion which is essential in the metabolism of the carbohydrates.

A discussion of insulin as a therapeutic agent is not within the scope of this paper, but as an agent through the use of which some of the problems of carbohydrates metabolism may be cleared up, it offers most interesting possibilities. Insulin, as is now well known, injected in proper doses, repeated at regular intervals, will relieve the metabolic difficulties of the diabetic in very large measure; it will restore the glycogenic functions of the liver and muscles; it will reduce the blood sugar to the normal level, remove the glycosuria; correct the acidosis and restore the lost capacity of the tissues to utilize sugar and fats; in other words it replaces the functions of the islands in diabetes in the same sense that thyroid extract (or thyroxin) replaces the function of the thyroid in certinism.

The physiological mechanism by which insulin acts in the manner described is intimately bound up with the chemistry of the sugars which is perhaps the most difficult subject in the field of organic or biological chemistry. There are, as is well known, sixteen sugars with the general formula $C_6H_{12}O_6$,—sixteen isomers, only four of which can be directly used by the body. The usual explanation offered for this fact is that the peculiar arrangement of the

atoms in the molecules of these four sugars brings them within the sphere of action of the special enzymes of the body. The structure of the molecule appears to be the determining factor in the assimilability of the sugars. Irvine has made the interesting suggestion that each of the carbon atoms in the molecule has its own particular function and they are not, as cogs in a wheel, all of the same value.

The more recent investigations of the structure of the glucose molecule by Fischer and later by Lowery and Irvine point to the existence of at least three isomeric forms which are indicated by the prefixes alpha, beta, and gamma. When ordinary solid glucose is dissolved in water and examined immediately by the two common methods, copper reduction and the polariscope, and again at a later period, as was observed by Dubrunfont as early as 1846 and more recently by Lowery, that while the copper reduction test remained the same, the polariscope reading had fallen to a much lower level. The apparently spontaneous change was later found to be due to a molecular rearrangement, the phenomenon of muta-rotation, and upon investigation of the solution after it had become stable, two sugars were isolated, alpha and beta glucose, the one with a relatively high and the other with relatively low rotatory value, $+109^\circ$ and $+19^\circ$, and these existed in the solution in certain proportions, in equilibrium, the rotatory value of the mixture being constantly 52.5 degrees. The structure of these two common forms of glucose has been very carefully worked out by Fischer and Irvine, and the difference between them seems to be in the position of the alcohol, the (OH.) group attached to the first carbon atom. Both forms have an oxygen atom linking the first and fourth carbon atoms, a butylene linkage. The gamma form of glucose has not been identified, but while it has the same reducing value on copper solutions, its rotatory value is lower than either the alpha or beta forms. Irvine suggests that it has an oxygen atom linking the first and third carbon atoms, a propylene linkage. It appears

to be much more reactive and to revert easily to the alpha and beta types.

Winter and Smith, applying these principles to the study of the normal and diabetic blood sugars, have presented evidence to show that the normal blood sugar is the gamma type, whereas the diabetic blood sugar is the alpha and beta types, and suggest that in the normal the internal secretion of the pancreas (insulin) brings about this transformation, whereas in the diabetic in the absence of insulin the change fails to take place. They regard the conversion of the alpha and beta glucose into the gamma glucose as fundamental and essential to the assimilation of glucose, —a preliminary re-arrangement in the sugar molecule without which there is no glycogenesis and none of the later stages through which the sugar molecule must pass for its complete oxidation. The function of insulin is, therefore, to bring about directly or indirectly through some other agent through which it may act, a re-arrangement of the atoms in the sugar molecule.

As attractive as this theory is, there are many difficulties in the way of its complete acceptance. Contrary evidence

seems to be accumulating, and criticisms of the methods of dealing with such an unstable sugar are not without substantial foundation. However, it seems clear that in the presence of insulin the sugar as absorbed from the alimentary canal or the ordinary solution of glucose injected intravenously is converted into some much more reactive form, a change which cannot be effected in a test-tube, nor probably in the blood itself, but in the tissues. The hypoglycemic action of insulin is not due to an immediate oxidation of the blood sugar, but rather to its passage into the tissues where it is condensed in part into glycogen and in part, if not in larger part, into some, as yet, unrecognized compound.

The quantitative relationship between insulin and the sugar reactions, one unit to 2 grams of sugar, suggests a chemical union between the sugar and the insulin, the result of which is a highly reactive compound,—a role comparable to that of iodine in the thyroxin molecule, or if not with sugar itself some third substance supplied by the tissues, the presence of which enables the tissues to assimilate sugar in the normal fashion.

CHARLOTTE SURGERY IN 1895*

George Wm. Pressly, M.D., Charlotte

Thirty years ago Charlotte had a teeming population of 15,000, electric lights and electric street cars, which ran from the Southern Depot to McDowell street and from the Seaboard Depot to the circus ground on Morehead. There was also a fire whistle at the waterworks on East Seventh street, which all but awoke the dead when a fire broke out about 3 A. M. The real new buildings were the City Hall and the Second Presbyterian Church. A visitor was told that the City Hall and the lot cost \$55,000, at

which he was supposed to take two or three deep breaths and whistle. There was one graded school in town, the old South School, and the entire third floor was vacant, which showed that there was something wrong. There were some thirty gold mines in and around the city, and the foundation of several fortunes were mislaid in them. Three of these mines belonged to a doctor.

There were some twenty doctors in active practice and three looking on. Of these twenty-three, only seven remain to the present time. Two are living in other cities and the rest have passed over into the morning land where there is no pain or sickness, and where

*Read before Mecklenburg County Medical Society, April, 1925.

the phone never rings at night. There was only one specialist in town, an eye, ear, nose and throat man, but more than half of the general practitioners were doing surgery, as a successful operation was a great help in getting medical practice. The laity rightly thought that if a man could cut your leg off, he could certainly cure measles and typhoid fever. At that time the doctor put Physician and Surgeon after his name and meant it. He treated a whole patient, including the family in those days, and not just a small section of his anatomy.

Drug stores were placed at strategic points about the Square, with a cluster of doctors attached to each one. Reese & Robinson was at the Independence Trust Company corner, Burwell & Dunn at Blakes, Jordan's at Liggett's, McAden's at the North Tryon Street entrance of the Bon Marche. This was an important drug store because they kept a good many of Dr. McAden's old instruments in a drawer from which you could borrow when you got in a pinch. Wilson's was at the corner of College and East Trade, where the Charlotte Drug Co. is now. Dr. J. B. Alexander's Drug Store was at 216 North Tryon. Most of the offices were upstairs or behind the prescription counter. A few had places on the ground floor. Calls came in over the store phone and the new doctor usually sat around where he could hear the bell, not that any of them were his, but occasionally a Victory Mill or Brick Row call might be turned his way. Surgical supplies were kept in the drug stores and the operator on his way out went by for his gauze, cotton, bandages and possibly a few extra instruments and a fresh bottle of chloroform.

Surgery was largely in the home. A practical nurse, the bed or an improvised table, room swept and sprinkled, the undraped windows, the bowls and pitchers, with old newspapers for the floor, a small table or two, plenty of hot water, clean sheets and towels, made a fair start for the operation. A major operation required three or four doctors, one for the anesthetic and two or three for the operation. There were no trained

assistants. A favored number went along to see it well done. When the work was in a country home, some distance from town, a good dinner not infrequently refreshed and repaid the surgeons for all of their labors. The hospitals were just beginning to compete with the home, and St. Peter's and the Good Samaritan were doing the hospital surgery in all this section of the country, with very meager equipment. St. Peter's had been started about twenty years before as a home and hospital for the aged and infirm poor of the city, under the name of the Charlotte Home & Hospital. In 1893 the name was changed to St. Peter's Home & Hospital, and in 1899 to its present name. Dr. T. J. Moore was physician in charge from 1876 to 1882. Dr. R. J. Brevard from 1882 to 1891, when Drs. R. L. Gibbon and C. A. Misenheimer took charge, and it is due largely to these two men that the rapid development of hospital surgery was brought about. There were ten rooms for all purposes, with six beds available for patients. The operating room was any vacant room convenient, usually on the ground floor and as the rooms were large, the patient was put to bed in the same room. The wheeled stretcher was not present, and was of little use if it had. Room, board and nursing was \$3.00 to \$5.00 a week for a private room. The wards were free, and no one who went into them was troubled about a dun either from the hospital, or from the doctor. Miss Mary Sharpe was superintendent, housekeeper, operating room nurse, special nurse, bookkeeper, dietitian, and also answered the phone. The sterilizing room was the kitchen, where the sheets and towels were boiled and the pans and pitchers scalded. The Kelly pad and the rubber douche bag were indispensable, as irrigation was the order of the day. In fact the Kelly pad became the insignia of the busy doctor, and one might look out of the second story window of the old Osborn building in the early morning and see a doctor crossing the Square with a satchel in one hand and a Kelly pad undraped in the other, and you would know that something was going on back of the

Central Hotel. The operating table was of the strong four-legged kitchen type, and was never known to break down with a patient. It required a little manoeuvring at times to get it up stairs or through a narrow door, but was plenty wide so that the instruments and a basin or two could be put alongside the patient. The Trendelenburg posture was secured by turning a straight chair face down on the table. The operator prepared himself by taking off his coat and giving his hands and arms a thorough scrubbing and then putting on a short sleeved sterile gown.

The Good Samaritan was built in 1888 by the same band of Episcopal women who were responsible for St. Peter's, and to these good people, headed by Mrs. John Wilkes, we owe a lasting debt of gratitude. Some of them rest from their labors, but their work goes on growing more and more helpful. If Charlotte ever has a large hospital worthy of the name, it should be called the Jane Wilkes Memorial Hospital. The colored patient has been a great help in surgery and was especially helpful at this particular time. Possibly many a discouraged operator has had his heart to rejoice and be glad at the unexpected recovery of one of these colored folks, and so went back to fame and fortune along the keen edge of the scalpel. The first graduate superintendent of a hospital in Charlotte was brought to the Good Samaritan during this year. She was a graduate of the Freedman's Hospital in Washington and Mrs. Wilkes, in her report for 1896 said, "the hospital is kept in beautiful order and the patients are satisfied and well cared for." Parks was an indispensable man at the Good Samaritan and the operations usually waited for Parks.

The operations ran from ten to twelve per year as an estimate and ranged from amputations to tonsillotomy, an occasional hysterectomy for fibroids, which was finished by fixing the cervical stump to the abdominal wound and the incision sewed smoothly about it. These cases usually made a very prompt recovery. Now and then one would see a d. and c. or a plastic on cervix or perineum

or a cul-de-sac puncture for pelvic cellulitis, removal of enlarged glands, hemorrhoids or strangulated hernia. A large ovarian cyst with a small pedicle would pop up now and then and a surgical fame would spread far and wide. The appendix was sleeping quietly in its little bed in the corner and no one dreamed what a great man he would grow to be in the future. The newest man gave the anesthetic, which was a wise arrangement as he was never in a hurry to go somewhere else, and it was likely the first close-up surgery he had seen. The older men were especially kind to the newcomers in this respect, and it was a great encouragement to the young fellow to give an anesthetic for the doctor. This paternal feeling for the new man was partly due, possibly, to his work as a preceptor in the days before modern education got to be so scientific. The newspaper cone and a wad of cotton was the mask. Half an ounce of chloroform poured in would usually put the patient to sleep and a few drops occasionally would keep him so. Of course, there were some rebreathed air that helped out the chloroform. The technique was in transition from the antiseptic method. The green soap poultice and bichloride were the gold dust twins of the day. Carbolic solution was used for instruments. Gloves only went with the high hat and Prince Albert on Sunday. Marine sponges were being used to some extent, and as it was too much trouble to clean them up after an operation, they were gradually discarded. The fastidious doctor kept his in a glass jar on the mantle in his office, but the average man kept them loose and handy in his satchel. A fee was slightly considered as it was reflected in the increase of general work and some of the younger men were glad to do a few just for the experience. The two outstanding men in the eyes of the newcomer were Dr. Joe Graham and Dr. J. P. McCombs. Dr. Robert Gibbon had been lately retired from a long and faithful service in general medicine and surgery. Drs. Graham and McCombs were in the prime of life, and it made the blood tingle to see either of these come rapidly out of

the drug store with a bulging satchel in his hand and his pawing thoroughbred at the curb, he had barely time to get in the buggy before the ringing steel of hoof and tire rattled over the cobblestones like a million dollars. There were giants in those days who did not shirk any job, small or great, and in their faithfulness and courage laid broad and deep the foundations upon which we

build today. Among other well known names on the roll of '95 were Drs. Dennis O'Donoghue, Simmons B. Jones, Hillary M. Wilder, Edward C. Register, Robt. J. Brevard, James W. Byers, Charles G. McMannaway, George W. Graham, Frank M. Winchester, Frank O. Hawley, Albert L. Petree, William T. Woodley.

OSTEOCHONDRAL TROPHOPATHY OF THE HIP JOINT (LEGG)*

Walter F. Cole, M.D., F.A.C.S., Chairman Orthopedic Clinics, Crippled Children's Commission, Greensboro

Osteochondral trophopathy of the hip joint, Legg's disease, Prethe's disease, quiet hip disease, and osteochondritis deformans juvenalis are terms used by the different authors in referring to a peculiar hip affection which was first described by Legg in 1910.

Legg summarized his observations in his original publication as follows: (1) Age five to eight years. (2) History of injury. (3) Limp. (4) Absence of pain. (5) Absence of constitutional symptoms. (6) Thickening about the neck of the femur. (7) Little or no muscle spasm. (8) Absence of shortening. (9) Typical x-ray appearances. The symptoms, the x-ray pathology and the etiological factors were discussed in more detail.

The object of this paper is to give you an abstract of the facts about this disease as I have absorbed them from Legg during my eight month's association with him and from the literature, consequently I will not quote from the different authors by name nor will I discuss the literature.

Reference to osteochondral trophopathy of the hip was noted in literature long before it was described by Legg, but it was not recognized as a separate entity. We find the cases reported were

classed either as tuberculosis of the hip or a deforming arthritis of children.

It is not an uncommon disease; nor is it geographically limited. It appears more frequently during middle child life, the male being more susceptible than the female. Possibly the right hip is more frequently involved, due to the fact that it receives the brunt of the strain during activity. One or both hips may be involved.

The x-ray pathology is characterized by flattening of the upper epiphysis and thickening of the neck of the femur.



Fig. 1.

Picture No. 1 shows the typical flattening of the upper epiphysis and thickening of the neck of the femur in both hips. The thickening is very much more pronounced on the right side than on the left.

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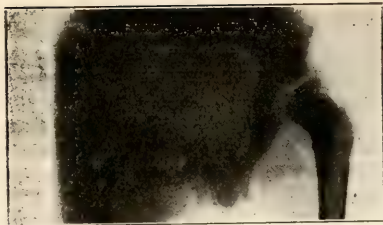


Fig. 2.

Referring to Picture No. 2, we notice that it is quite unlike the above. The epiphysis is crushed, and divided into four pieces. Along the epiphyseal line is a circumscribed area which looks as though there has been some bone absorption. Tuberculosis of the hip might well be considered here; but by a study of comparative roentgenological pathology one should experience no difficulty in making a differential diagnosis.

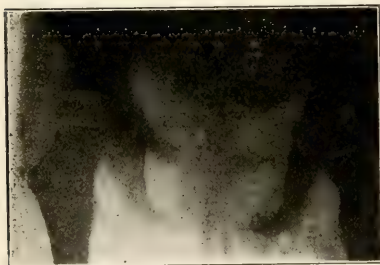


Fig. 3.

For instance, Picture No. 3 shows a beginning flattening of the head and thickening of the neck of the femur.



Fig. 4.

The epiphysis, the neck, the shaft, etc., show some absorption of the lime element. The joint cavity is not clear; which suggests possibility of fluid or pus. Three months after this picture was made the child was brought to the clinic for treatment.

Picture No. 4 was made on admission of child to the hospital. Comparing these two pictures we see that the bone atrophy has increased. The epiphysis is very much thinned and beginning to melt away at the sides. The joint shadow has increased in intensity, and there is a beginning involvement of the acetabulum. Thus is shown a marked difference in the roentgenological pathology.

Legg mentioned in his original publication that injury was an important factor in the etiology of this affection.

The question of injury did not offer an explanation of the roentgenological pathology found in the hip satisfactory to many of the later writers, consequently we find quite a list of the possible causes of this disease mentioned in the current literature. Syphilis, tuberculosis, and rickets have been mentioned as possible causes, but they have been eliminated on account of the negative findings. Deforming arthritis has also been eliminated.

If congenital malformation were a factor, it would be present at birth, and the deformity would have been recognized in some of the many radiograms taken of infants.

Further, we have reports of negative radiograms taken at the time of injury; but later the child developed trouble in the hip, and radiograms were taken which showed the characteristic pathology.

A low grade staphylococcus was isolated in one case operated upon, but this was considered a coincidence and not of importance as to the etiology.

Legg claims, and I think to the satisfaction of the majority of the observers, that the child receives an injury to the hip which may be slight at the time, but in some way disturbs circulation between the shaft and the epiphysis. This causes a congestion of the neck of the

femur, and diminution of the nutrition of the epiphysis with resultant atrophy and flattening of the head by weight bearing. The congestion of the neck remains for an indefinite time, and thereby sets up a proliferative process of the periosteum of the inner side of the neck with thickening.

Recently three cases of osteochondral trophopathy of the hip have entered the clinic. All of them gave history of injury to the hip followed from two to eight months later with a limp. In only one case was pain mentioned.

The continued limp is usually the cause for the parent seeking medical advice; although after an active day some of them will complain of more or less discomfort in the hip.

The general physical appearance, the absence of pain and discomfort and the erect posture of the child would not suggest pathology of the hip joint although the limp be present. Other physical defects found upon examination are about the same as one would expect to find in the average child.

Hip flexion may be slight or absent. The child can flex and extend the leg at the hip without pain. Atrophy is not marked. Shortening is negligible. One may be able to detect thickening of the joint, but the area is not especially sensitive to palpation.

Muscle spasm is variable. There is a restriction to rotation and abduction, and such motions of the hip may cause some pain.

In differentiating the acute infections of the hip from osteochondral trophopathy of the hip one should remember that the symptoms associated with the infections are of a very much more exaggerated type, and that in the latter case the reontogenological pathology is constant and characteristic, while in the other it may be the reverse.

The method of treatment depends upon the amount of pain and discomfort present. Rest in bed and clearing up defects that should be looked after will relieve many of them. Where the pain is more annoying, rest, extension for one or two weeks, followed with plaster spica for four to eight weeks, and then a flannel bandage for a short while, is usually sufficient to insure a good prognosis.

The child should use crutches and be permitted to gradually increase weight bearing.

In conclusion, I will say that osteochondral trophopathy of the hip is distinctly an entity, the cause of which produces a disturbance of the circulation between the epiphysis and the neck of the femur. Injury is the most frequent contributor to the resultant reontogenological pathology. A low grade infection of the neck may produce conditions which simulate it.

This contribution of Legg to the profession is certainly a distinctive piece of thorough and accurate work, as the later observers have been able to add very little to our knowledge of this disease.

THE USE OF MORPHINE-SCOPOLAMINE ANESTHESIA IN OPHTHALMIC SURGERY*

J. Y. Malone, M.D., Asheville

I will not endeavor to discuss the history and literature of "Twilight Sleep" as used in obstetrics. Since its development in this field it has been used in various branches of surgery with a great many variations.

Morphine-scopolamine anesthesia has had considerable success in obstetrics, rhinological surgery, and preparatory to ether anesthesia. I have been unable to find in the literature, any reference to its use in ophthalmic surgery. To my knowledge, it was first used in ophthalmic surgery four years ago, by my

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former associate, Dr. Meyer Wiener, of St. Louis.

Technic

The technic which I find the most satisfactory, consists simply of one hypodermic injection of morphine and scopolamine, one and one-half hours before operation. Forty-five minutes after the first injection, a second injection of scopolamine alone is given. Just before operation, the appropriate local anesthetic is used as if no previous anesthetic had been given.

The dosage used on an average sized adult is morphine, grs. 1-4, and scopolamine grs. 1/130 at each injection. The dosage is altered in proportion to age and body weight according to the usual standard.

The usual result is that the patient is quiet, stuporous, incoordinated, cheeks flushed, mouth dry, pupils may be enlarged somewhat. Although the patient is in a stuporous condition he is capable of being aroused momentarily, either by acute pain or loud speech. The patient may be as quiet as with general anesthesia, or as restless as with local anesthesia alone. Even though the patient be in the latter condition, the memory is blocked so that there is, as a rule, no unpleasant recollection of the operation, or fear in case future operations are necessary. Occasionally a patient is noisy and quite excited, but easily quieted by a few inhalations of ether. Usually, however, the combination of the morphine-scopolamine with local anesthesia, will replace a general anesthesia, or if local were the anesthesia of choice, the net gain is the good psychology of no unpleasant recollection of the operation.

Value in Various Types of Operations

(a) *Strabismus*—Various operations for this condition may be done in children, as well as adults, by this technic with the decided advantage that the patient may be told to look at an object and he will do it momentarily. This follows the operator to determine if the condition has been corrected sufficiently. It is impossible to determine this accurately under ether, for general an-

esthesia usually tends to cause the eyes to turn up and out. Obviously, if the proper correction has not been obtained, it is possible to alter the correction and thus get a better result.

(b) *Dacryocystitis, Chronic*—Reconstructive operations involving nasal work or extirpation of the lacrymal sac is accomplished readily with this technic without having to resort to general anesthesia.

(c) *Glaucoma, Chronic or Acute*—May be done with this technic. There is no decided advantage except the psychology in chronic glaucoma. In acute glaucoma, frequently the eye is so painful the patient is made very restless by its manipulation, in which event a few inhalations of ether are necessary.

(d) *Enucleation*—is easily accomplished under this anesthesia.

(e) *Lid Operations*—Operations for entropion, ectropion, trachoma, ptosis and plastic operations, are easily accomplished under this anesthesia, but the only distinct advantage is the absence of recollection of the operation.

(f) *Cataract*—This anesthesia is contra-indicated in cataract operations because perfect control of the patient is necessary.

(g) *Plastic Operations* on the cornea, as well as most operations for *extraction of foreign bodies* are not suited for this technic. In these operations, as well as cataract operations, the eye ball is either opened widely or may accidentally be opened widely if the patient should move or strain, thus the danger of expulsive hemorrhage or expulsion of vitreous, offers a distinct contra-indication to the use of morphine-scopolamine anesthesia.

Conclusion

(1) Morphine-scopolamine anesthesia, combined with local anesthesia, is adaptable to many types of operations upon the eye, although there are some operations for which it is contra-indicated.

(2) Morphine-scopolamine anesthesia has the advantage, in some cases, of displacing general anesthesia, while in others the advantage is limited to the

good psychology of preventing any knowledge or unpleasant recollections of the operation.

(3) Morphine-scopolamine anes-

thesia enables one to do strabismus operations on children and be able to ascertain the exact amount of correction obtained at the time of operation.

ON THE TEACHING FUNCTION OF THE MEDICAL PROFESSION AS A WHOLE*

Chairman's Address, Section on Practice of Medicine

Frederick R. Taylor, B.S., M.D., High Point

In the last fifty years medicine has made more progress than in all previous history. The great triumphs of this period, beginning with the fundamental work of Pasteur and its brilliant application, and going on through the discovery of diphtheria antitoxin, the prevention of typhoid fever, the eradication of yellow fever from the Northern Hemisphere, malaria control, and other epoch making events down to insulin, scarlet fever serum, and other great discoveries of the present day, are legion, far too many and too great to be enumerated here. Yet in the very midst of this most productive age of medicine, and despite strict laws regulating its practice, we see flourishing all about us all manner of irrational, unsound, and often fraudulent cults and isms, commercialized schemes founded on pseudoscience, that attract an astonishing number of patients, including many of a pretty high degree of general intelligence.

We are sometimes puzzled for an explanation of this situation. The easiest one is to quote P. T. Barnum to the effect that the American people love to be humbugged, and let it go at that. Such a cynical explanation, however, is scarcely adequate. Admitting that Barnum was a past master of applied psychology, and that he proved beyond cavil that the American people do like to be humbugged in their amusements, and even granting that many people take the same attitude in regard to matters affecting their health, still, this explana-

tion does not give us the whole truth of the situation. To approach a really adequate solution of the problem we must first get a proper historical perspective. We must remember that regular medicine itself has often been the tool of blatant quacks within the profession, and the agent of humbuggery so highly developed that chiropractic and various other modern cults appear as futile when compared with it.

Excluding the superstitions of the ancient heathen priesthoods, whence medicine arose, it perhaps never developed within its own ranks a more perfect spirit of quackery under the guise of authority than in the seventeenth century in France. True, certain individual quacks, gifted almost to the point of genius, such as Paracelsus, Valentine Greatrakes, and others, probably exceeded any single individual of this French group in spectacular ingenuity and magnificent chicanery, but these men defied authority and were a law unto themselves, whereas the group mentioned was supported by the full authority of the Paris Faculty of Medicine. Fortunately, this group had a mighty enemy in the great Moliere, the French Shakespeare, who mercilessly analyzed its quackery and exposed it with matchless satire in no less than nine different dramas, the height of his satiric genius being reached in "Le Malade Imaginaire," which almost wrecked the authority and pomposity of the Paris Faculty, yet still pomposity and authority without adequate basis in fact prevailed in the practice of medicine. However, the achievement of fuller knowledge by slow and painful effort

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gradually made physicians less arrogant, because more conscious of their own limitations, and here and there some man, with the humility that belongs to true greatness, led the profession upward towards the light.

At about the close of the eighteenth century, Edward Jenner achieved the first supremely great medical triumph, by discovering smallpox vaccination. In the first half of the next century Crawford Long banished the terrible agonies of surgery with ether. Many other great men were by this time working to free medicine from the shackles of superstition, and before long the light broke, and the art of medicine was founded securely on experimental science.

Even in our own day, however, it is easy to observe the effect of ancient traditions that have been handed down to us. In the old days an air of mystery, a pompous bearing, and a wise look, coupled with a peculiar dress and speech, were considered essential to the successful physician. Translating this into modern American, he had to be a good bluffer to get by, and his safest bluff was to be very careful not to say anything that the patient could understand, lest he discover his ignorance.

I fear that we have not altogether escaped from this unfortunate heritage; many men today feel that the less they tell their patients the better. This attitude is undoubtedly the correct one in special cases, including most very acutely sick patients, and certain types of psychoneurotics, but, *as a general rule of practice, I am convinced that it is not only grossly wrong, but that it functions towards the undoing of the medical profession.* I freely grant that a little knowledge is very often a dangerous thing, but I also admit that there is much wisdom in the command,—"Know thyself"—and a good deal of truth in the adage that every man is either a fool or a physician at forty; and, I might add, that so far as his personal health is concerned, he is more likely to be a fool. Assuming that he is a fool, whose fault is it? Not always his, by any means. *The regular medical pro-*

fession is often to blame by the neglect of its teaching functions, which, though one of its most important duties, is probably more neglected than all its others. I would place the teaching of his patients alongside of diagnosis, treatment, and study, as the four prime functions of every real physician.

I have been accused by one of my friends of doing harm by teaching my patients too much. I dare not say that I may not have made such a mistake in an occasional individual case, though my friend failed to advance a single case in evidence, but as a general proposition, I emphatically deny the charge.

Let us spend a few moments in considering how we may teach our patients and the public. For convenience, we may discuss this under certain special heads.

1. *Etiology*—Nearly all physicians are willing to spend some time explaining the predisposing causes of disease, in order that their patients may guard against unnecessary illness. Surely we should be as eager to explain the exciting causes of disease, where they are known, not only for the patient's good, but in the defense of truth, in this day when so many are proclaiming from the housetops that all diseases come from displacements of the spine, or similar sophistries.

2. *Pathogenesis*—This may seem too technical to ever attempt to explain to the lay patient, yet I have seen a number of patients who had previously been told categorically that they needed glasses, who would not get them until a few simple diagrams explained what errors of refraction are, why they produce symptoms, and how they are corrected.

3. *Pathology*—Instruction in this will necessarily be elementary, but I can see no reason why the person who has some definite pathology should not have that explained to him as much as the healthy school child should be taught physiology, again granting that there are exceptions in special cases.

4. *Symptomatology*—There are many times when we must instruct patients to watch for warning symptoms,

such as fatigue, fever, headache, visual disturbances, etc. Patients in whom drugs are being pushed to the therapeutic limit must often be taught to watch for the symptoms which indicate that the limit has been reached. The most extensive instruction in symptoms is usually given to tuberculous patients, pregnant women, and diabetics, and rightly so. The intelligent diabetic should be taught to perform simple laboratory tests, to know the symptoms of hypoglycemia if he is taking insulin, etc.

5. *Diagnosis*—Here the all-important thing is to teach the patient that he is *not* a diagnostician, and must under no conditions attempt to be one.

6. *Prognosis*—This is admittedly the most difficult thing in medicine, yet the one with regard to which we are most often expected to express an opinion, to either the patient or his family. On this point I cannot do better than quote the words of my revered teacher, Dr. M. Howard Fussell. He said—"Always tell your patients the truth so far as you possibly can. *Don't* tell a patient with a compensating mitral lesion that he has heart disease and stop there, or you will probably leave him with the utterly false impression that he has a dynamite bomb inside of him that is liable to explode at any moment. *Go into detail enough to convince him of the truth* that he can adjust his life to his environment in such a way that he may have a good expectancy."

7. *Prophylaxis*—Surely we should educate the people in every way to prevent disease, yet in this connection it is well to remember that actions speak louder than words, and that when we become careless about reporting transmissible diseases in accordance with the laws, or performing other functions due the public health, we have a right whatever to expect the people to carry out the instructions we give them regarding the protection of the public, or even to give those instructions a respectful hearing.

8. *Treatment*—This should be confined to suggesting general hygienic measures, a few simple remedies for the

home medicine chest, and to the special training of special patients, such as the diabetic, who must learn diabetes in its application to his condition, and who may have to learn to give himself insulin and to be prepared to treat any resulting hypoglycemia. In general, self-treatment is to be strongly discouraged, *and adequate reasons given why it is bad.*

This necessity of giving adequate reasons for our views brings me to another topic. I once heard a certain physician say of a consultation that he had with another physician—"That was no consultation, it was an insultation." When I suggested that he elaborate, he explained that the other man had differed with him in the case, which was all right, but had refused to give any reasons why he differed, which was all wrong. When asked why he differed, he would only reply,—"*Because that's the way I feel about it*"—or words to that effect. Needless to say, every consultation should teach both the family physician and the consultant, for that is the inevitable result of a real exchange of ideas between professional men; dogmatism never teaches anything.

The foregoing has been written from the standpoint of the physician's duty to his patients or his brother practitioners, but the doctor's teaching function should also be considered from the standpoint of his duty to himself. Is he wasting a lot of valuable time? Not a bit of it, for there is no better way to learn than to teach, for when you try to explain something that you think you understand, when you do not understand it, you are at once convicted of your own ignorance, and that is always worth while.

I hope to see the day when this teaching function of the medical profession will extend to ethical advertising, not of individual personal prowess, but of the services that scientific medicine is ready and willing to render humanity. At present the various cults broadcast all manner of misinformation, and there is little chance for the layman to learn the truth. Hygeia is a good be-

ginning, but more and more we must devote our efforts to educational ends. We do not wish to make ill-trained physicians out of our patients, but we do owe it to them to give them a chance to get intelligent information from trained sources, else they will be forced to seek their information elsewhere, and many will, *as the result of our negligence* be-

come victims of the various cults, the exponents of which stand ever ready to dispense a flood of pseudoscience crammed into them by a few weeks attendance at some self-styled "school" that guarantees a paying practice to its graduates, and that teaches at least one course supremely well, a course in commercial advertising and propagandism.

SACRAL NERVE BLOCK ANESTHESIA IN SURGERY AND UROLOGY*

J. D. Highsmith, M.D., Fayetteville, Surgeon and Urologist, The Highsmith Hospital

Epidural, extradural or caudal anesthesia was first used by Cathelin in 1901 for the purpose of treating neuralgia, sciatica, sexual neuroses and enuresis. He tried the methods for the purposes of inducing anesthesia, but met with little success. In 1910, Laewin, by the addition of sodium bicarbonate to a larger quantity of a more highly concentrated novocaine solution, was able to perform painlessly the more common operations on the anus, perineum and female genitalia. He called the method extradural anesthesia.

Parasacral anesthesia is first accredited to Braun. He injected the sacral nerves one by one, reaching them at their exit from the anterior sacral foramina. This method of anesthesia is performed with the patient in the lithotomy position, two points of injection two centimeters from the median line at the level of the sacro-coccygeal articulation are selected. A needle 5 to 6 inches in length is introduced and the way is felt past the edge of the sacrum, and along the anterior surface of the bone, parallel to the median line to the height of the second sacral foramen. This entire distance is injected with twenty c. c. of 1 per cent novocaine solution. The needle is now drawn back to the edge of the bone and redirected at a slightly increased angle, much deeper than before, until it strikes the promontory of the sacrum close to the

first sacral foramen, when twenty c. c. of solution is injected. The procedure is repeated on the opposite side, after which a final injection of five c. c. is made between the coccyx and rectum.¹ The chief objections, as I see them, to this method, are:—1st, the danger of perforating the rectum; 2nd, danger of spreading infection and of disseminating cancer cells, when operating for cancer of the rectum.

The sacral nerves can be injected one by one by passing the needle through the posterior sacral foramina. This procedure constitutes trans-sacral block, and was proposed by Danis in 1913. This method has overcome the disadvantages and inconveniences of the parasacral method of anesthesia. Combined with a low caudal injection, complete anesthesia of the entire pelvic floor, and all the structures lying below the pelvic peritoneum is obtained. Combined with a suprapubic field block, in resection of the bladder for carcinoma and diverticulum, and in doing suprapubic prostatectomies, the anesthesia is excellent and there is complete relaxation of the muscles of the abdominal wall.

Sacral nerve block by the trans-sacral, or the single epidural injection method, or both, if properly administered, is as safe a procedure as any other method of nerve blocking, and should not be confused with spinal anesthesia. The fluid may ascend the vertebral canal in the extradural space when a large amount is injected, but with proper technique it never penetrates the dura to mingle with

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the spinal fluid. If we should accidentally enter the spinal canal, we can withdraw the needle, change its direction, then wait a few minutes, giving the opening time to close.

While the technique of sacral anesthesia is simple, still, in order constantly to obtain perfect anesthesia, it requires, as in block of other nerve trunks, a thorough knowledge of the anatomy involved, plus practice and patience.

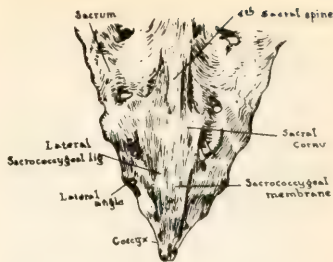
Anatomy

The sacral hiatus, through which the needle must be introduced before it is advanced deeply into the sacral canal, lies at about the juncture of the sacrum with the coccyx, and has the shape of an inverted V or U. This opening results from the defective or non-closure of the laminae of the last sacral vertebrae and is covered over by a dense ligamentous structure, the posterior sacrococcygeal membrane and ligaments. The hiatus varies much in size but is nearly always large enough to permit the ready passage of the needle.

The most important consideration, the sacral canal, is a prismatic space connected above with the spinal cord of which it is the continuation, its lower extremity being the sacral hiatus. Laterally the sacral canal gives exit to the sacral nerves by way of foramina. These foramina soon divide into a Y- or V-shaped canal for the passage of the anterior and posterior divisions of the sacral nerves through the anterior and posterior sacral foramina. The sacral canal is filled with loose adipose tissue, areolar, connective tissue, lymphatics and venous plexuses. The dural sac ends opposite the lower border of the second sacral segment, the filum terminalis of the cord passes through the loose cellular tissue contained in the sacral canal.

The posterior or lateral sacral foramina lie in the same straight line on each side of the sacral crest and are covered over by ligamentous structures. They traverse the sacrum anteroposteriorly and are very nearly equidistant from each other.

The sacrum has a great many varia-



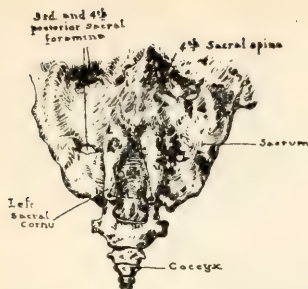
The sacrococcygeal membrane and ligaments.

tions in different individuals and a careful study of the osteology, as well as the course of the nerves, is a necessary preliminary investigation.

It is quite common to find a sacrum with its hiatus very high up. The roof of the sacral canal may be entirely lacking. There may be closure of the first arch only, or closure of the first two arches. There may be an abnormally low closure and small hiatus. The hiatus may be so compressed that a needle can hardly be introduced. There also may be found frequent variations in the number of sacral segments. Not infrequently there are six pieces. The number of foramina vary with the number of segments. In sacra of six segments there are five foramina on each side. Variations in the size and shape of these foramina are also noted.

We commenced the use of this form of anesthesia in October, 1922, a little more than 2 years ago, employing it at first in operating about the anus and rectum upon patients who were in extremely grave condition. We now employ it almost exclusively in operations on the rectum, anus, prostate gland and bladder, urethra, scrotum, testicles and in painful urologic examinations and manipulations. We have also found it to be entirely satisfactory in operations on the vagina, cervix uteri and perineum.

Technique. We employ either the caudal block, trans-sacral or a combination of the two methods, depending upon the type of operation to be per-

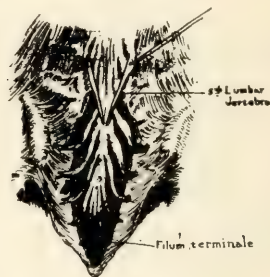


The site of puncture (cross) through the sacral hiatus is the center of the triangle formed by joining the sacral cornua and the fourth sacral spinous process.

formed, and conditions met with in making the caudal injection. If, as sometimes occurs the tip of the needle cannot be passed as high up in the sacral canal as the level of the second sacral foramen, it is best, in the majority of cases to block the nerves in the sacral foramina. If a hysterectomy, either abdominal or vaginal, or a posterior resection of the rectum high up is to be performed, we do a complete sacral block, that is, a combined caudal and trans-sacral, and also a paravertebral block of the last three lumbar nerves, according to the technique of Labat's method of procedure. A preliminary hypodermic of morphine, either with or without scopolomine, may or may not be given, depending upon how nervous and apprehensive the patient is. In all time-consuming major surgical operations, performed under this type of anesthesia, we give a preliminary hypodermic of morphine and scopolomine.

All injections are made with the patient lying flat upon the abdomen, with a cushion slipped under the hips, to raise the sacral region and render the landmarks more accessible. The skin over the sacral region is then sterilized, following which the sacral hiatus is defined by the left forefinger passed on the midline of the back from the tip of the coccyx toward the sacral region. A Labat spinal puncture needle, 80 mm. in length is now entered perpendicularly to the skin until it penetrates the

membrane closing the sacral hiatus. It is then slightly withdrawn and the end depressed to an angle of 20 degrees. It is then slowly and carefully introduced upward in the midline. After the stylet is withdrawn from the needle the end is carefully inspected to make sure there is no blood or spinal fluid running out. If there is, withdraw the needle slightly until the flow ceases and wait a few minutes before making the injection.



The sacral nerves as seen after resection of the posterior wall of the sacral canal.

We have recently been using 30 to 40 c. c. of a two per cent. novocaine epinephrin solution in the sacral canal, and from 5 to 10 c. c. of a one-half of one per cent. solution in each of the sacral foramina, starting at the second, which is located by raising a wheal 1 cm. medial to and below the posterior superior iliac spine. We reduce 1 c. c. each time the quantity deposited in each subsequent foramen. We inject 1 c. c. more in the first foramina than in the second.

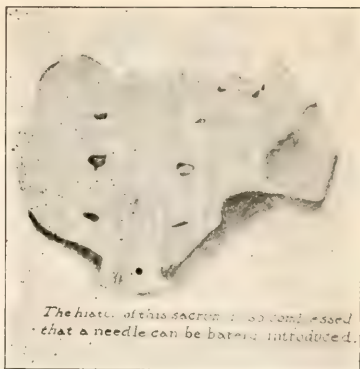
When first commencing the use of this form of anesthesia we employed a novocaine bicarbonate solution with the addition of sodium chloride. We did not use epinephrin in this solution, preferring to have it in reserve in case of collapse from the toxicity of the drug.

Without the use of adrenalin complete anesthesia makes its appearance more rapidly, but the duration is not so long, nor is it as profound. Analgesia may begin at the ano-scrotal region in 5 minutes; prostate and bladder in 20 minutes. It may require 40 minutes to be complete. Its duration is about 2 hours.



Abnormally low closure and small hiatus. A definite overhanging fourth spine is present.

Three of four minutes should be consumed in making the injection into the sacral canal, during the procedure, the



The hiatus of this sacrum is so compressed that a needle can be barely introduced.

prostate gland and bladder, six of these being suprapubic prostatectomies, six suprapubic cystotomies for drainage and



Posterior aspect of the sacrum.



Closure of the first two arches, the bony wall extending down to the third arch, spines of which have not united.

patient may complain of cramps in the legs, which is proof of correct insertion of the needle and indicates too rapid injection. The injection is always painless when not made too fast. A slow injection gives the solution a chance to diffuse gradually through the tissues of the canal and avoids trauma.

We have employed this form of anesthesia in 175 cases, using the extradural, caudal or epidural method of injection alone in 137 cases; trans-sacral alone in 3 and a combination of the two methods in 35 cases. Twenty-two of this series were for operations upon the

examination of the interior of bladder, three, for removal of bladder stones, two cystotomies for rupture of bladder, four Young's punch operations, three of which were for fibrous contracture at vesical neck and one for median lobe enlargement of prostate gland, and one prostaticotomy for abscess. There were twenty-eight operations on the rectum and anus, eighteen hemorrhoidectomies, seven anal plastics for fissures and fistulas, and three proctoscopic examinations with excision of specimens. There were eighteen operations upon the vagina, cervix and perineum, six for the excision of Bartholin glands, two combined perineorrhaphy, colporrhaphy and



Closure of the first two arches.

repair of cervical tears, three perineorrhaphies, two of which were for complete lacerations, one amputation of servix uteri, and six dilatations and curettage of uterus. There were fourteen operations performed upon the urethra, ten dilatations of filiform strictures in



Closure of the first arch only.

patients who had complete retention of urine, one removal of an impacted stone, and three meatotomies. There were eight epididymotomies, three varicocele operations, and three operations for hydrocele. There were twenty-nine cystoscopies for operative procedures requiring the use of a cystoscope, ten manipulation of ureteral stones, six fulgurations of bladder tumors and thirteen dilatations of ureteral strictures. Fifty cystoscopic examinations were performed under caudal anesthesia, twenty-two for ulcerative cystitis, four for acute trigonitis, three tuberculous cystitis, four malignant cystitis, three submucous ulcers, and fifteen patients who were

either very nervous or requested some form of anesthesia.

All of these cases were entirely successful except fifteen. In two it was necessary to give gas and ether from the start; three other cases complained of having a great deal of pain but no form of general narcosis was resorted to, two of these operations were for hemorrhoids, and one a prostatectomy. The majority of the failures occurred in the cystoscopic cases, there being eight in this series, and seven among the general surgical group.



Complete sacral bifida, the canal being open throughout its entire extent.

Failure in the majority of cases, was, I believe, due to the fact that we commenced operating too soon. Experience has taught us that it is best to wait 30 or 40 minutes after the injection before beginning the operation and that anesthesia is the deepest at about one hour. Imperfect technique was the cause of failure in some of the early cases. I am sure several at least, if not all of these could have been made successful had a trans-sacral block been performed after failure of the epidural injection.

Results of Sacral Anesthesia in Series of 175 Cases

	Cases	Results	Satisfactory	Failures
Prostatectomy	6	5	1	1
Suprapubic Cystomy				

For drainage and examination of the interior of bladder.....	6	6	0
Removal of bladder stones	3	3	0
For ruptured bladder	2	2	0
Young's punch operation	4	4	0
Prostatotomy for abscess	1	1	0

Operations on Rectum and Anus

Hemorrhoidectomy ..	18	16	2
Anal plastics for fissures and fistulas	7	6	1
Proctoscopic examinations with excision of specimens	3	3	0

Operations on the Vagina Cervix and Perineum

Excision of the Bartholin glands.....	6	5	1
Combined perineorrhaphy, colporrhaphy and repair of cervical tears	2	1	1
Perineorrhaphy	3	3	0
Amputation of Cervix	1	1	0
Dilation and Curettage of Uterus	6	4	2

Urethral Operations

Dilatation of filiform strictures	10	10	0
Removal of impacted urethral stone	1	1	0
Meatotomies	3	3	0
Hydrocele Operations	3	3	0
Varicocele Operations	3	3	0
Epididymotomy	7	6	1

Cystoscopies for Operative Procedures Requiring the use of the Cystoscope

Manipulation of ureteral stones	10	10	0
Fulgurations	6	6	0
Dilatation of ureteral strictures	13	12	1

Cystoscopic Examinations

Ulcerative Cystitis ..	22	20	2
Acute Trigonitis	4	4	0
Tuberculous Cystitis ..	3	3	0
Malignant Cystitis	4	3	1
Submucous ulcer	3	3	0

Miscellaneous

By request, very nervous patients, etc. 15 13 2

Total 175 160 15

Untoward Symptoms: Undesirable complications occurred in five cases. One was an old man with a left sided hemiplegia, upon whom a prostatectomy was performed. We had him in the usual position for block of the sacral nerves, hips being elevated, and head consequently lowered. While the injection was being made he suddenly developed symptoms of collapse, with extreme respiratory difficulty. As soon as he could be turned upon his back, and head elevated, the condition cleared up and he asked what had happened. We believe this reaction was due more to lowering the head than any effect of the novocaine used. All the sequelae occurred in patients who were very nervous and in a weakened state. In two cases there were convulsions, of the epileptiform variety, which were over with before any treatment, other than holding them on the table, could be given. Following the convulsions, in each case, a prolonged cystoscopic examination including urography was carried out with patient in good condition. Another patient reacted with nausea, vomiting, dizziness, rapid pulse and a great fear that she was dying. There was nausea and an occasional vomiting spell for four days. In one other case the injection was followed by a partial respiratory paralysis, nausea and vomiting.

The untoward symptoms appeared immediately after the injection was made into the sacral canal. In no case was it necessary to postpone the commencement of the operation for more than a few minutes. There was no case of hemorrhage, and none of necrosis of the skin at the site of puncture.

In no case did any permanent or lasting trouble develop as a result of sacral nerve block anesthesia. We have not found it necessary in any of these cases to give stimulation to the circulatory system in any manner. The blood pressure instead of dropping, as it does following inhalation anesthesia, has a ten-

dency to remain stationary, or to rise. With but few exceptions the patients on the day following operation by this method, were in surprisingly good condition. Also those who were cystoscoped under this form of anesthesia, with but two exceptions, did not complain of any post cystoscopic pain and distress. We attribute this to the fact that the anesthesia causes a relaxation of the ureteral walls and in consequence there is no muscular spasm; also, the patients not being conscious of any pain, keep quiet, while on the table, and there is less trauma.

Conclusions

I. We have not employer sacral anesthesia in obstetrics, but it is reported as being very satisfactory.

II. Sacral nerve block anesthesia produces a degree of relaxation of the anus and pelvic floor, that cannot possibly be obtained except under the deepest inhalation narcosis.

III. The bother and consequent loss of the surgeon's time during operation when local infiltration is employed is avoided.

IV. This form of anesthesia has enabled us to operate, with comparative safety, upon several patients on whom the risk of using a general anesthetic would have been too great.

V. Anesthesia of the sacral nerves is especially satisfactory in urologic cases, where so many patients are encountered having reduced renal function. The mortality following operations on the bladder and prostate is markedly reduced. It materially lessens the shock that so often follows the enucleation of the prostate gland. Small contracted and infected bladders may be dilated sufficiently to make a complete cystoscopic examination without discomfort to the patient.

VI. There are no contraindications to sacral nerve block anesthesia, other than deformities and anomalies of the sacrum in which it is impossible to enter either the sacral canal, or the posterior sacral foramina, and, in suppurative infections and malignancy of the skin and subcutaneous tissue of the sacral region.

VII. Anesthesia of the sacral nerves should be limited to operations on the prostate gland, bladder, rectum, pelvic floor, cervix, urethra and genitals. The testicles and cord are not anesthetized, but may be by injecting from 2 to 5 c. c. of the solution into the cord. If large amounts of the solution are not used the procedure is free from risk. I believe there is considerable risk connected with the injection of large quantities of the solution in order to obtain higher levels of anesthesia.

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Discussion

Dr. J. T. Burrus, High Point:

I wish to express my appreciation of the patience and persistence of Dr. Highsmith in pursuing this line of work. My experience in using sacral anesthesia extends over probably 25 attempts, or cases, and it was my conclusion that injection of the sacral canal gives only a partial anesthesia, and I am unable to see the great advantage in sacral anesthesia over spinal anesthesia. In the spinal anesthesia you obtain all, and more than, you could obtain with sacral anesthesia. With spinal anesthesia you get more complete anesthesia. I make this statement after having used stovain in 75 cases. After using the stovain in 75 cases I have recently used novocain, as prepared by Metz, in something like 210 cases—cases in which we have done hysterectomies, appendectomies, prostatectomies, all classes of perineal operations, hemorrhoid operations, and amputations, and I have yet to see a case that has even given a shock picture. Many of these cases have been in very old people, have been in cases that have shown bad hearts and bad kidneys. I am unable to see where the sacral anesthesia offers anything over the spinal anesthesia.

Dr. C. S. Lawrence, Winston-Salem:

In regard to sacral and parasacral nerve block, I personally dislike the method, first because it takes so much time, and, second, because of so many failures of getting the desired anesthesia. We have adopted and used it in several cases, but have almost abandoned it at this time because in order to do it you have to start pretty soon after breakfast in order to get by with two or three operations. It reminds me of turning a machine gun loose on the pa-

tient and then laying off and letting him wait thirty minutes for the heavy artillery to be turned on. He gets nervous, and two or three of our cases have had nervous chills following the injections. We have used spinal anesthesia in various operations, from amputations to as high as the gall bladder, in about 200 cases in the last few years. It is so satisfactory and so quick and the anesthesia is so complete and we like it so well that we do not use the more tedious methods. Just the other night I had a case of cesarean section with contracted pelvis on which I had operated two years before with spinal anesthesia. The patient asked for the same anesthetic, and I used it and did another cesarean section. The patient liked it so well that she asked for it.

Dr. Highsmith, closing:

My experience with spinal anesthesia is rather limited. I have had about fifteen cases that were operated on under spinal anesthesia, and in two cases had a quite severe reaction, respiratory failure, and the patient looked pretty shocked for a while. The sacral anesthesia has no relation whatever to spinal anesthesia. It is merely blocking the sacral nerves, the same as any other method of nerve blocking. It takes very little time to make the caudal injection, about four minutes being all the time that is necessary, and it should take that long to make a spinal injection. Of course, you do have to wait thirty minutes, sometimes forty minutes, for that anesthesia. During that time you can be operating on another case or doing something else. It is very seldom necessary to do a transsacral block. You can advance the needle to a point equal to the second sacral foramen, and you do not need any transsacral block. Of course, you do not want to go any higher than that, or you would be doing a high sacral anesthesia. The relaxation is as perfect as can be asked for. Of course, the anesthesia should be limited, as I said, to operations on the bladder, rectum, prostate, vagina, and urethra, and I have thought it is certainly better than the

more dangerous procedure of spinal anesthesia. Yesterday we had an obstetrical case on which we tried sacral anesthesia, and the results were excellent. This was a case of rigidly contracted cervix uteri, and under one caudal block I injected 50 c. c. of one-half

per cent. solution. The relaxation was fine, and I did a podalic version and repaired a laceration of the cervix. The patient had no pain and went to sleep while we were doing it. I did not use any preliminary narcosis.

THE MEDICAL R. O. T. C.; AN INFLUENCE IN AID- ING THE SOLUTION OF THE SO-CALLED MEDICAL ECONOMIC SITUATION*

Joseph Howell Way, M.D., Waynesville, Colonel, Medical, Army of the U. S.

When I received license to practice medicine in North Carolina the standard requirement for students applying for the degree of M.D. in the best medical schools of the country were chiefly "to have been engaged in the study of medicine for three years, including the time spent under a preceptor, and attendance upon two courses of medical lectures." As a mater of fact, the "course of lectures" were the same each year; first and second year students sitting in the same classes and listening to a repetition in the second year of what had been delivered in their presence the initial year by the same didactic lecturer. A limited number of clinics (conducted as a rule exclusively by the "professor" himself) were held, and laboratory instruction given in Hahnemannian portions.

Attaining the age of twenty-one years a couple of years later I joined the N. C. State Medical Society, discovering, as I became acquainted in the profession, that there were quite a number of excellent practitioners of medicine and surgery, residing in this and other states, enjoying the confidence of their respective communities as capable and respected members of the medical profession, caring for large practices, and day by day serving the trusting public probably, almost, if not quite as well, in the immense majority of cases treated by them, as do the disciples of Aescula-

pius of the vintage of the last decade. A number of such doctors were men of great common sense, but whose medical schooling had been limited to the advantages derived from attendance upon a single five-months' course of lectures costing in many cases where the young men were of limited means financially, from three to five hundred dollars. (I have known of a young man receiving the recorded honor of "leading his class" on examinations before our state board of examiners for license to practice medicine whose actual medical school expenses amounted to only five hundred and ninety-five dollars and fifty cents incurring in attendance two full courses of lectures, graduating, and this young man had also acquired prior to graduation, twenty-seven standard volumes of medical literature at a net cost to him of one hundred and forty-six dollars).

But our country was growing wealthier, our loved Southland was recovering its former prestige and strength, standards of every kind were being raised, and the men of our profession were in no respect laggards in joining in the uplift cry, with the net result that very soon the standards of medical education were going upward by literal leaps and bounds. First came the increase in years at college to three, later to four, and an added fifth; while at the same time, *pari passu*, the pre-educational requirements rose from, no crystallized demand whatever, to high school graduate, then one, and two college years, later to an academic degree—and still the good work went steadily, if not mer-

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rily onward and upward until today we are perfectly safe in saying the exactions of our profession are the most rigid of all the learned professions.

Around one hundred and sixty-five diploma-in-medicine institutions in existence in the eighties and early nineties of the century just past, shrank to some sixty. Students spent much time in laboratories delving in more or less intricate chemical and microscopic procedures, soon to be largely forgotten in major part at least, when later confronting the serious practical side of relieving human suffering and delaying the advance of death; collateral studies were added to the medical college curriculum, and various gradings and elaborations in the course of medical college instruction have taken place, and with a necessarily added tremendous increase in both knowledge acquired and cost incurred in securing the degree in medicine and license to practice. During this same period of time, as a corollary perhaps, possibly as a more or less normal reaction, to this very proper advance of the standards of regular medicine, no less than six more or less distinct varieties of "cults" have appeared on the medical horizon, and while denied recognition in some, have secured legal status as practitioners of the healing art in various states of this union.

Personally I am profoundly appreciative, and cordially approve of the net results accruing to the medical profession and to the cause of better prevention and therapy of disease. As medicine has advanced, so also has the influence of the men of our profession increased and their usefulness and prestige been enhanced. While this is true, it is just as well that we take cognizance at this time in the historical development of medical affairs, that our possible future progress is seriously menaced by the suggestions made only very recently from a very high official source (no less a personage than the president-elect of our great national medical organization) to the effect that we probably should arrange for the development of a less highly educated and

finished product of medical training to care for the citizenry of the remoter rural districts; fear being manifested as shown by recent economic studies, that the physician of modern training is deserting the country places which are said to be in imminent danger of becoming without medical practitioners.

Now it is quite evident that much of this variety of talk sounds very real, and it is admittedly a fact that the present trend of medical men is to follow identically the same economic influences which are also carrying each year to the cities and larger towns of the land an increasingly larger portion of our rural population in general. However, this may be true, there should be made an earnest and determined protest by every doctor of medicine who loves and respects his profession, who appreciates the advantages, alike to profession and to people, accruing from our present high admission standards, against any and every effort looking toward lessening, either the preliminary educational requirements to enter upon the study of medicine, or the time spent in actual college and hospital work before acquiring the degree and the right to practice. This suggestion, despite its coming from "one clothed with authority" (for the time being at least) deserves to be promptly repudiated by the organized profession everywhere, and to be taken note of otherwise as only a passing incident in the history of medical progress.

Even though admitted, there does exist at the present, a tendency to oversupply the cities with medical men at the possible expense of a lessened rural supply; inevitably the swing of the pendulum will come back in part, at least; and the improvement of our highways and means of transportation will make perfectly feasible the transfer of the immense majority of the physicians to the urban places, and yet the rural districts be far better cared for in the matter of medical and and surgical service than were a previous generation with more country practitioners.

The growth of the sentiment for the building of local county and municipal

hospitals, community owned and controlled, throughout the state and nation which is now achieving an impetus which in the next few years will carry forward at a tremendous pace. This, and other influences, may be expected to adjust this apparently disturbed phase of our medical economic life satisfactorily; and without our ever giving serious consideration for a moment to the proposition to reduce the standards which have taken so much of earnest effort and time to raise to their present status. But rather should we, holding firmly to the gained high standards, and believing our humblest citizen, regardless of where he resides, entitled to share with other citizens in as good care when ill, as modern knowledge has made possible for any to have, we should seek to find measures and means to improve the present rural practitioners, and to constantly influence the interest of a sufficiency of young capable educated men to engage in the study of medicine in order the ranks may be kept reasonably well filled at all times.

In this connection, interested as the gentlemen in this presence are, in the vital question of the Army of the United States building and fostering from among the best of our younger physicians and surgeons a sufficient number of medical officers to meet any emergency, it is a real pleasure to note that the definitely fixed and apparently now well established policy of the Federal Government in developing and maintaining in a number of the best medical colleges of the country of Medical Reserve Corps Units is admirably calculated to afford material aid to many young men in securing their education in medicine. Though conceived for the very vital purpose of filling the Medical Reserve Corps of the Army, the medical units are exerting most helpfully the members of the corps.

Those who have given careful thought and study to the matter of military preparedness in our country have for many years been convinced that we have been derelict in not being better prepared to resist an attack from any source, but until the outbreak in 1914, of the World

War, efforts to secure proper action proved futile. The interest and concern, then aroused in our people speedily brought in 1916 the enactment of the National Defense Act authorizing the creation of the Officer's Reserve Corps along lines which as the results attained have shown, naturally made the Corps a great national asset.

Coupled with the Act of 1916 was provision for the R. O. T. C., which however did not have time to fully function to the desired degree ere America was caught and carried into the maelstrom of earth-wide activity. Following the armistice, the R. O. T. C. movement grew rapidly, though restricted in its functioning as a preparatory school for officers of the line only, the professional groups being for practical purposes almost excluded until the Reorganization Act of June 4, 1920, when provision was made for the medical and other professional groups. This latter Act recognizes the fact that students engaging upon the study of medicine have already received academic training, and are therefore better prepared to assimilate special training, and the time was cut for medical students from 150 hours per college year to 90, thus crediting the to-be young Aesculapian with 40 per cent increased assimilative capacity over the line service. It is to be remembered, however, that in the developing of the line officer that his academic studies possess only a relative bearing on his duties as an army officer of infantry, cavalry, or artillery, while in the growing of the man of medicine, every possible time in his professional course of study is calculated to have more or less intrinsic value in preparing him for the duties of medical officer, for the principles of medical or surgical practice are the same in the main, whether in civil or military line of doctor's duty. Hence the wisdom of the apparent concession is easily seen.

The work of the R. O. T. C. is divided alike in the summer schools, as in the medical and other professional schools into basic and advanced courses. With the medical unit detailed in the schools

of medicine, only lectures, demonstrations and class-room exercises, are given, reserving the purely military side of the subjects for the summer camp. Two years are given to the basic course and two to the advanced course, in medical schools, thus affording to each year of the medical students' course a taste of military medical education.

It is strongly recommended that medical students taking in their professional school years the R. O. T. C. ----- unit work, in the summer, attain the training camp which is at federal expense, including uniforms, equipment, travel pay, and subsistence. At the medical college in the two basic courses, the student's freshman and sophomore medical years, there is no pay provided, but during the last two college years, allowance is made to medical students taking the course, of commutation of subsistence; or in other words, medical students when securing their four years of college education, may if desired, assume in addition the work of the R. O. T. Corps, if attending a school of medicine to which the U. S. Army has attached a military medical unit of instruction, and receive during the junior and senior college years from the federal government the money value of the regular rations supplied to soldiers of the regular army. This, while not a large sum, is an item worthy of the student's consideration when essaying the long and expensive course leading to his degree of M.D. In the summer camps medical students also receive soldier's pay. In addition to the compensation in cash, there is the opportunity of receiving a degree of training that only those of us who went to military camps in 1917 and 1918 without previous knowledge of matters military, or those similarly unfitted to come after us in a future emergency, can fully appreciate. The work now being done by the R. O. T. C. would indeed have been a God-send to the majority of us had we experienced it in prewar days for after induction into service we only received what is now being provided by an intelligently directed government to medical students during their college course,

after induction into the service and arrival in camp. In the coming years when our forces are mobilized, how vastly different when we have the full complement of medical reserves available for active duty. No lengthy stay in camps and training centers, only a shorter stay to renew again what one had already learned, and each medical man would soon be properly fitted for his place in the machine.

And I need not record here the belief current among medical officers that military training improves the physique, health, appearance, and morale, of man and he should become a fitter citizen for having had the experience. At the present time the army has medical officers on duty with units for medical military training functioning in no less than twenty-four of the leading Class A medical schools of our country, while there is a waiting list of exactly one-half as many more medical colleges desiring federal establishment of medical R. O. T. C. courses, but the existing facilities and finances are completely exhausted for this year. Another year it is hoped to be able to accommodate these and others wishing to afford their students in medicine this added opportunity for professional development and advancement. Among the twenty-four medical colleges now giving R. O. T. C. courses are Harvard, Univ. of N. Y. and Bellevue, Cornell, Univ. Penn., Rush, Vanderbilt University, Med. Coll. of Va., Washington Univ., St. Louis Univ., which with others have enrolled around 3,500 students in different year courses; of which number approximately five hundred will be available when graduating at the approaching medical commencements, to receive along with their diplomas in medicine commissions as Lieutenants, Medical, Army of the United States.

In addition eight schools of dentistry and four of veterinary medicine are also given R. O. T. C. courses with relatively equally creditable showing.

May I, in conclusion, be permitted to quote the words of our recent great commander, Gen. John J. Pershing, who said in a communication only a few

months since to the Medical Club of Philadelphia:

"Your profession has ever rendered unselfish service to the cause of humanity. In peace and in war our medical men have shown their loyalty and devotion to country. The sacrifices you have made in the interest of science, and humanity have marked you as men of courage, with a fine sense of local citizenship.

"Through the indefatigable efforts of leaders in the study of the prevention of disease, the usual camp diseases, typhoid fever, infectious diarrheas, malaria and yellow fever, formerly the greatest hazards of military operations, have been reduced to insignificant concern. These conquests of yours have in general stimulated the industrial progress of tropical countries, and in particular have removed the barrier to the consummation of one of the greatest engineering accomplishments of all times. The mobilization for the World War gave practical evidence of the control which principles of preventive medicine have made possible.

"These achievements prepare you for your intimate conception of the preparedness program under our military policy. The events leading up to our participation in the World War have rapidly become dim in memory, but I know you will recall the precipitate way in which we mobilized and organized our forces to play their surpassingly brilliant part in the final defeat of the Central Powers. America added new blood, which, like old wine, exhilarated the forces of our allies and gave the final blow to our mutual enemy and a glorious victory for the right. Our traditional lack of plans for the defense of our country and the principles for which its people have always stood resulted in an unnecessary cost in lives and money. But I believe the lesson has been learned. Congress has by the Act of June 4, 1920, provided for the organization of a truly effective citizen army, to be developed in time of peace for the undesired event of war.

"Your profession has always been

ready and willing to fulfil the citizen's obligation for the defense of the country, as proved by your eager response in the World War, in which your accomplishments reflected the highest credit on your personnel. The first active participation of the United States after the declaration of war was the assignment to active duty with the British in May and June, 1917, of some 800 young American physicians, who volunteered their services immediately after we cast out lot with the Allies. These men were assigned to front line work, where they 'carried on' with rare devotion to duty and to the credit of the nation.

(Parenthetically, gentlemen, may I be permitted to observe and record here that Dr.—then Captain—William Pinckney Herbert, Asheville, N. C., was a member of this force thus commended by the Commander-in-Chief. He is also continuing his army connection through his present commission as Lt. Colonel, Medical).

Continuing General Pershing said:

"Your response to the country's need resulted in the development of a large and efficient machine composed of about 35,000 officers, and more than 250,000 men, who contributed vastly to the ultimate success of American arms.

"The advantage of organization for any service is indispensable. You have recognized that by the establishment of your great American Medical Association. Peace time organization of the medical profession lends itself admirably to assimilation in the event of emergency under the National Defense Policy.

"Your service is a two-fold one:

"1. As leaders in your community, having expert knowledge of the benefits of physical development, leadership and discipline, afforded by military training, you are better qualified than any other group of men to keep before our citizens the importance of their support of the principles of defense.

"2. As potential members of the medical service of the Army of the United States, knowing the inestimable

value of adequate organization in time of peace for service in emergency, you can make possible the development of a harmonious and efficient machine ready for service without tedious delays.

"You have perhaps better than any other class of men, the advantage of these basic principles. You can therefore, because of this broadness of view your life work inculcates, appreciate the importance of an adequate military organization so developed in time of peace as to assure the protection of the country.

"The medical history of the World War made by your profession is one of bright achievement, but the task is unfinished. The nation having provided a policy for the creation of a citizen army, your obligation to aid in the fulfilment of the wise provision is obvious. The

nation has confidence in you, and I feel assured that the organization of the medical service for future emergencies will not fail."

Gentlemen of the Medical Veterans of the World War, and Medical Officers of the reserve of the Army of the United States, I trust that I may ask, other things being equal, you kindly lend your helping hand in securing when occasion and opportunity offers, the attendance of the young men studying medicine with whom you contact, on medical schools functioning units of R. O. T. C.; thereby helping the young men, helping the profession of medicine, helping the national cause of preparedness, and helping promote a cause that I believe is near and dear to us—the advancement of the best interests of the Army of the United States.

ACCESSORY NASAL SINUSES—A Study

James M. Parrott, M.D., F.A.C.S., Kinston

It is more than probable that the physician knows less about the anatomy of the nasal accessory sinuses than almost any other organ of the body save those concerned with cerebral localization. It is unfortunate that many nasal specialists, so called, know almost as little concerning sinus anatomy as does the average general surgeon. While this subject is an exceedingly dry one, as are all anatomical discussions, one is more than repaid for the special and unusual trouble incident to the study and investigation of both the gross and microscopical anatomy and embryology of the nasal bodies. Until one has thoroughly mastered this subject, in its minutest details, and the relationships which the various nasal structures bear to each other and to the landmarks on the face and temples, one is doing an exceedingly unwise and dangerous thing to attempt intra-nasal surgery at all. These remarks pertain more especially to the sinuses of the nose than to any other nasal structures. Especially are they important in dealing with the ethmoid

body. It is my opinion that it is more essential that one should know, with mathematical and intuitive exactness, the construction of the ethmoidal cells than even the sphenoids.

The mucuous membrane which covers and lines the sinuses and the sinus cells is but a continuation of that which covers and lines the interior of the nose, and is practically of the same construction, except that in one or two of the sinuses, notably the frontal, ciliated epithelium is more pronounced and developed.

It is a matter of especial importance that it be remembered that the lymphatics from the sinuses and all nasal tissues, especially and more particularly from the posterior group (lymphatic), empty into the deep cervical chain or into the retro-pharyngeal nodes, and have an intimate anatomical relation with lymphatics of the tonsil. Almost every experienced nasal surgeon has noted, more or less frequently, the so-called sympathetic inflammation of the tonsils following nasal operations. The

anatomical lymphatic connection explains such a phenomenon. This lymphatic distribution should be given special and particular thought in throat examinations, and should be kept in mind in the presence of tonsillar infection, because of the fact that many times the tonsils are the secondary offenders, whereas the sinuses are really the primary ones. Of course the removal of the tonsils under such circumstances would not cure the patient, and it is one of just this type of case who continue to report to the physician's office complaining of "throat trouble" after the infected tonsils have been properly and skillfully removed.

To illustrate:

Little F., age ten, was brought to me for treatment. On examination I found both tonsils infected and presenting an unusual pathological appearance. Further examination showed infection of the fronto-ethmoidal cells on the left side. (The fact that it is not often that the frontal sinuses are fully developed until after about ten or twelve years of age explains why in this case I found only the fronto-ethmoidal cells instead of frontal sinuses with ethmoids). Without going to much into detail and thus forgetting the point which I am trying to make, suffice it to say that, after anesthesia, and before the removal of the tonsils, I operated the fronto-ethmoidal cells and obtained just what was expected, a splendid result.

Another illustration:

Miss W. consulted me for continued "throat trouble" as she called it. History developed the fact that she had had "throat trouble" for a number of years and that two or three years before seeing me she had had her tonsils removed. Examination showed that the tonsillectomy had been performed properly. In spite of this she was troubled frequently with attacks of sore throat, more often in the winter than in the summer. A thorough examination demonstrated pan-ethmoiditis with probable infection of the sphenoidal cell. Suitable operative procedure was done, and while the ethmoidal condition con-

tinues, much mitigated, however, she had no recurrence of the throat pathology. The non-recurrence of the throat symptoms in spite of the continuance, even though much improved, of the ethmoidal infection, is probably explained by the fact that the patient now has free drainage and very good ventilation, both of which are necessary for recovery or even improvement.

It is my opinion,—and this is based on good anatomical interpretation as well as careful, close, and extensive experience,—that sinuses are more often the primary seat of the tonsillar infection than most nasal specialists realize; and I do not believe one does one's patient entire justice without making detailed and very thorough, and if need be, repeated, sinus examinations, before removing tonsils. There is this advantage, however; if one removes the tonsils he is doing a good work even though the results be incomplete, because it is true that if the tonsils become and continue infected say for three or four or five or six months there is no relief except by tonsillectomy, even though tonsillar infection is only partial or secondary cause of the trouble. It must be confessed that it is rather humiliating to assure the patient that such throat trouble will discontinue after operation and then have it recur with more or less frequency. If the primary seat is detected, that is, the sinusitis, and a sinus operation done and after-treatment instituted, at the same time the tonsils are removed and the patient is advised of the possible long duration of the sinus treatment even after the sinus operation, the patient is much more reconciled than he or she would be.

I believe that the lymphatic distribution to which reference has been made above is more often the cause of tonsillar infection than is the fact that the infection in the nature of pus discharge flows across the nasal wall in the mid meatus or over the base attachment of the mid turbinate down in the pharynx, and from there is distributed mechanically to the surface of the tonsil.

I take it that at least the majority of the nasal surgeons have a more or less

"speaking acquaintance" with certain anatomical structures found in the lateral walls of the nasal chambers, but it is certainly not amiss for the nasal specialists to systematically review the field during an examination. Of course, as the light passes into the nose, the first structure seen is the inferior turbinate, above and just in front of the anterior tip of the middle turbinate one notices a more or less pronounced ridge and a more or less bulging extending downward and backward (the *processus uncinatus*). Just behind this is a slit, (the *hiatus simulnaris*), appearing as though it were the opening of a blind ditch the bottom of which is hid from view, leading immediately into the *infundibulum ethmoidalis*. Just behind the *hiatus semilunaris* is a projection, the *bulla ethmoidalis*. I think it well that this short anatomical description be kept in mind, because it is my judgment that it is much better and safer to operate the ethmoids, especially the anterior group, without removing the mid turbinate, and the posterior group without removing more than the anterior fourth, whenever it is possible to do so. Such a possibility will pertain in probably ninety-five cases out of a hundred, in the hands of an experienced operator, unless the midturbinate has an unusually large lobulus or knee or tip, which has undergone extensive cystic degeneration, (so called *ethmoidal mid turbinate cell*;—which is possibly correct from an embryological view-point). If the *bulla ethmoidalis* does not immediately come prominently into the field, it will usually do so after shrinking the anterior tip of the middle turbinate with cocaine and adrenalin. However, the failure to see the *bulla* standing out clearly like a Pilot mountain on the landscape should not disconcert the operator; and will not, if he be experienced.

I shall not discuss operative procedure in detail. However, before making further references to surgical procedure, let me say this; that my nasal surgery views are very conservative in that I do not think one should go further at the first or even the second operation than

to provide sufficient and thorough drainage and ventilation for such cells as one thinks are involved. However, such operative procedure as may be necessary to secure adequate drainage and ventilation should be continued through and past the ethmoidal bodies even into the *sphenoid cell*, until one is satisfied that the point of infection has been traced to its end. I do not think a Mosher operation should be done unless one's "back is to the wall."

I prefer, in fact much prefer, removing the *processus uncinatus* with a sharp knife, being careful, certainly, not to plunge through the orbital plate, as my initial work. As soon as this structure which may be three-fourths of an inch long and about one-fourth or more of an inch wide, has been removed thus destroying the anterior inferior wall of the *infundibulum* the *bulla ethmoidalis* then looms up as the almost only thing in sight. I think then it is wise to proceed backward and downward and outward opening such cells as are pathological. Then retrace and follow the interior cells. The chances are that the simple opening of the various cells at this location will enlarge sufficiently the ostium of the frontal sinus to easily enter and extend it. I know it is contrary to the ideas of a great many, but I can see no objection to gently rasping outward and forward the frontal sinus duct, if such necessity should appear. Certainly this procedure should be done only by one skilled and trained in the work and who has thoroughly developed his sense of direction and distance. It should not be attempted by a tyro under any circumstances. If one has not yet removed the middle turbinate, exercises patience and great gentleness, and has acquired by long experience a well developed sense of distance and direction, on need not fear fracturing the *cribriform plate*, even though one be working just at its lateral side and above and anterior to it. Just here let me say and emphasize that I know of no field of surgical procedure, save in bronchoscopy, where a complete mastery of the subject is more important than in doing *ethmoidal* work, especially in dealing with the anterior cells

and the intra-nasal opening of the frontal sinuses. By anterior cells I mean those cells the opening of which drain under and in front of the middle turbinates. In studying the surgical anatomy of the nasal sinuses, and while operating, it is of the greatest value to keep in mind the external landmarks which are practical guides to the location. Pratt, I think, was one of the earliest ones to make the suggestion, although a thorough observation had been noted before Pratt's publicity, that the anterior cells can be located as being in front of a perpendicular line drawn through the orbito-temporal ridge, and that posterior cells are those located immediately behind such a line, but not quite to the perpendicular line drawn mid way between the orbito-temporal ridge and the external meatus of the ear. The sphenoid cells would be just behind the posterior ethmoids and just in front of the mid line to which reference has been made above. The cribriform plate can be fairly well located externally by a horizontal line drawn through the inner canthus of the eye, the plate resting immediately above. It is well to remember that the septum is represented by a central perpendicular line through the nose, that the ethmoid body is bounded externally by a perpendicular line drawn through the inner canthus, and that the external border of the cribriform plate is just internal to the line drawn perpendicularly and mid way between these two lines. However, in doing intranasal work it is not so necessary to recollect this as to keep in mind a sense of distance and direction. Of course if the middle turbinate is still intact, all one has to do is to work gently outward and forward, remaining external and above its attachment. When I write this I do not mean that one can plunder around at will in this area even when the middle turbinate remains attached. A bull-in-a-china-shop kind of surgeon should never operate on the nose anyway.

I do not wish to be misunderstood and, therefore, take occasion to say here that for a long continued infection of a large frontal sinus I decidedly prefer a

Killian radical operation to any other surgical procedure. For the relief of a suppurative infection of a small frontal sinus, or for acute frontal sinus suppuration, without ethmoidal involvement, and of more than four days duration, and when infraction of middle turbinate and cocainization does not give quick relief, I prefer a simple surgical procedure through the eye brow.

An abscess of the antrum of Highmore had best be treated by the usual irrigation; if this fails, but elevating the anterior tip of the inferior turbinate about half an inch, chiseling in and enlarging with forward cutting forceps. I regard a Caldwell-Luc operation as a last resort procedure.

I am quite sure that the nasal accessory sinuses are more often infected in children than is generally thought. Before the third or fourth year the ethmoidal invagination, from which is developed the antrum of Highmore, the frontal sinus and the ethmoidal cells, as well as the sphenoid, has not yet sufficiently detached itself and distributed itself to give these parts a very exact anatomical relationship. However, even with children three or two or one years of age the undeveloped sinuses become infected and cause a vast deal of trouble, and occasionally even death. I sometimes wonder, though I have no special reason for doing so, if such infection is not very often the cause, via the lymphatics, of adenoid hypertrophy. I strongly believe that small lymphatic tissue called adenoids is normal in children under five years of age and when it becomes abnormally large such hypertrophy is due to some exciting cause. It is not without reason to assume that a child in its infancy can have sinus infection and a subsequent or a secondary adenoid infection and that the primary involvement after clearing leaves a continuance of the secondary trouble in the adenoids. I think this suggestion as to the cause of so-called adenoids is worthy of a serious and further investigation and if this idea is correct it may account for so many recurrences of adenoids.

It is a trite and really true saying that "One usually finds what one is looking

for," and if this be true, in so far as sinusitis in children and infants, it is because the sinusitis really exists and produces the clinical phenomea which have theretofore been ascribed and which continue to be ascribed to frequent attacks of "head colds."

While these remarks have been more or less rambling and are of a hodgepodge nature, I am moved to make them because experience through a number of years has taught me that the points which I have suggested are very frequently overlooked and especially regarding sinus involvement in children. It would require quite a lengthy article to deal with infantile sinusitis alone; however, I shall content myself with emphasizing its importance. The specialists, as well as the general practitioner, should remember that the sinuses do not usually become well developed and finally located until about the tenth or twelfth year. It is also important to know that occasionally one finds unusually well developed and well located sinuses in children of four and a half years of age. Quite recently I have been very much interested in learning that Douglas had found an absence of frontal sinus on one side at fourteen and had discovered a well developed frontal sinus on each side at four and a half years of age. Both of these were in his clinical

work and, therefore, could not be followed through the morgue. Certainly if the frontal sinuses are well located one can be quite sure that the maxillary antrum has nestled itself well under the eye and the ethmoidal cells, together with the sphenoids have located themselves with reasonable exactness. Just two illustrations of infantile sinusitis:

Little M., age 2. When seen in consultation had suffered several days with more or less frequent convulsions gradually assuming a meningeal type, accompanied by hyper-pyrexia, with nasal obstruction. An intra nasal opening was made just beneath and internal to the inner canthus, pus evacuated, recovery very rapid.

Little E., boy three and a half years of age. When seen was in a profound stupor, nose blocked, eyes edematous, high temperature. Diagnosis, pan-sinusitis with meningitis. Local anesthesia, shrank intra nasal tissues but not much, sufficient, however, to obtain some drainage. Enlargement of the sinus ostium was attempted but the little fellow died in a few hours from meningitis which had already developed before I saw him.

This rather sad end was the cause of my giving this subject of sinusitis in children and infants special attention.

The Gorgas Memorial Institute seems to be accomplishing its initial purpose of uniting laymen and doctors, and instilling into the masses a recognition of the fact that scientific medicine is the only proper authority in health matters.

A special article written by the Detroit Saturday Night and appearing in the issue of Feb. 14 is pertinent. It reads in part:

"Quacks and quackery in the field of medicine and general health protection will receive a heavy blow when the Gorgas Memorial Institute, recently founded in honor of the great army medical man who showed the world that yellow fever and other pestilences could be conquered by preventive methods, gets functioning."

"The Institute is not heralding as one of its purposes the counteracting of propaganda such as is spread by Bernard Macfadden and others of his kind who use every opportunity to attack the medical profession, but just so far as its plans, as announced, are successful, it will help to overcome pernicious teachings and ignorance regarding health."

"The Institute will carry out General Gorgas' ideas of the exercise of preventive measures and the use of scientific medicine to check disease and wipe out pestilence

The County Societies are also receptive to the Gorgas Idea. They see in the movement a plan which will aid each member individually.

SOUTHERN MEDICINE AND SURGERY

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*A journal for the promotion and diffusion of
usable medical knowledge.*

The New President of the Medical Society of North Carolina

Heretofore practitioners of the Art of Medicine have been chosen to fill this high office, and among these have been many whose labors have advanced the knowledge of its Science. It is naturally to be expected that doctors coming into intimate daily contact with other doctors and with the general public, and in a character most favorable to the making of good impression, would attain to the kind of popularity which elevates to office.

The election of Dr. MacNider evidently came about in a very different way, for his "patients" are all among what it pleases *homo sapiens*, (self-christened), to call "the lower animals." Besides being deprived of this opportunity to get in the public eye, and print, he labored under the positive handicap of being a "laboratory man," a being who in general has been regarded as a more or less visionary person, not at all in the class with "us practical healers of the sick."

It is said that we waited for other states, and even other nations, to recognize his greatness,—just as happened in the case of Poe; but we shall indulge

the hope that the sincerity of our applause will be permitted to atone for its tardiness, and rejoice that, in *his* case, his own people acclaim him while he is above ground and in the fine flower of his vigorous manhood.

Throughout his professional life Dr. MacNider has labored toward the working out of intricate problems of the first importance. He has checked his work in the most careful way, so that, if he failed to lead, he could never mislead. He has been most meticulously careful, in reporting his results, to decide every questionable point against himself.

Notwithstanding this, he is acclaimed, the world over, an adder to the knowledge of disease; a benefactor of the race.

It is a matter for self-gratulation that North Carolina can so appreciate an unassuming, unpretentious striver after knowledge, incurably honest and straight-forward, who has so abundantly demonstrated the falsity of the commonly-held theory that a doctor cannot afford to say, "I do not know."

Crime and Responsibility

The immensity of this subject appalls any thoughtful person who ponders it. Many questions must be answered more or less satisfactorily before a step is taken toward the harmonizing of diverse opinions. For our purpose no fine-spun theories as to what constitutes a crime will be considered; but the term will be used to cover only *mala in se* (evils in themselves) and *mala prohibita*.

In addition to his interest in common with all other citizens and property-holders, the doctor has a peculiar concern in the dealing with, and fixing responsibility for crime. Our discussion will be mainly of this phase, which is that revolving round the giving of expert testimony as to sanity, with a view to establishing responsibility, or its lack.

It is recognized that one not an alienist lays himself open to reproach in venturing to discuss this subject; but what are we to do?; where are we to turn?

The alienists themselves, while they agree that too few, rather than too many, of those who have committed crimes, escape punishment on the plea of insanity; that, apparently, is the only point on which they are in agreement. Certainly, to one who follows the trials through newspaper columns, it appears that the array of talent of this class on the one side is usually just about neutralized by that on the other. In a given case three or four eminent alienists for the State are neatly counter-balanced by four or five distinguished psychiatrists for the Defense.

We are fully persuaded that, with negligible exceptions, these diverse opinions are honestly held; and that makes the problem all the more difficult.

It is very likely that much of this diversity of opinion,—anyhow, diversity of expression,—grows out of confusion of terms. Some use the term "abnormally mentality" synonymously with "insanity"; and others, though refusing to go to such a length, introduce "abnormal," "subnormal," "vitiated heredity," and "vicious environment" into the discussion to the great beclouding of the issue.

Even at the risk of being pedantic it seems well to recall the fact that *normal* means nothing more nor less than *average*. *Norma* is *rule*. The normal person, strictly speaking, is a purely hypothetical individual. Each of us is abnormal mentally, morally and physically,—some, of course, more than the others. Manifestly it is absurd to lay down a proposition that no one is sane, even if it was once said, on authority regarded in some quarters as high, that "they are altogether become filthy."

And however desirable it may be that fruits and brutes be reduced to a dead level of normality for the facilitation of grading for marketing, few would have the temerity to say that mundane affairs would go on half so well as they do, if each of us were made in the same image, actuated by the same impulses, energized by the same desires, and governed by the same opinions and passions.

There are some who incline strongly

to the belief that all criminals are insane. Starting with the idea that no sane man would commit a crime, they have only to turn the proposition head for tail, and there they have it. We do not think there is the least reason for believing this to be true; but assuming it to be true, to what does it lead? To this: that, since all these insane and "mentally abnormals" are in need of institutional treatment, there are not enough doctors, nurses, or hospital beds in the world to take care of a small fraction of the patients, and there appears to be reason for doubt that there would be left on the outside a sufficient number to grow food for us on the inside. So it seems that we must manage in some other way.

Especially since Mr. Volstead grew famous, we hear much about *personal rights*. As nearly as can be gathered from the vague expressions heard, many, if not most, feel that a *right* is some privilege which is inherent in the individual. A good many years ago it was the good fortune of the writer to come across "The Philosophy and Practice of Slavery," by Prof. Smith, of old Randolph-Macon. This book defined a *right*, accurately, succinctly and finally, as a *good*. Justice is but a balancing of rights, and may be clearly defined as *the largest expediency*. Now it may be that some connection will be apparent to those who have wandered thus far through the maze, wondering what it was all about. We commonly hear it said that one should not be blamed for anything which he could not prevent. Certainly not; but blame and punishment are entirely distinct things, and only remotely associated. If so large a percentage of the human family as is indicated by recorded opinions of many alienists, be mentally incapable of fitting reasonably harmoniously into the social system, the common good requires that they be permanently removed; those who have shown exaggerated criminal propensities, and about whose cases there has been most diversity of opinion as to mentality, being removed first, to cut off all possibility of liberation after

rehearing, or a repetition of the Peacock fiasco.

Some of the most distinguished writers appear to lean to the side of entire freedom from responsibility based on the conclusion that we are only creatures of circumstance. Assuredly a very attractive,—but as we must regard it, a wholly specious,—argument can be made out for this proposition. Granting, however, that this is true; that the criminal in the dock, governed by his own peculiar hereditary impulses as affected by his successive environmental influences, could not possibly have decided to do otherwise than as he did; who can deny that, if his environment had been cast in a community in which it was common street knowledge that crime was, and would be, almost certainly followed by heavy and swift punishment, *this factor would have sufficed to tip the balance of his decision in the other direction?*

Most of us can recall (and many will admit) that, in our boyhood, questions of *mine and thine* as regards apples and watermelons were decided in an off-hand and haphazard manner. The incipient alienists among us may have declared themselves impelled by urgings altogether beyond their control; but those with less sublimated intellects shouted, "I'll bet I'll get the ripest one," rolled over or under the fence and got it.

But there was one point on which all of us, including those of the least powers of self-restraint, agreed with striking unanimity and promptness; this being, that the presence of a dog reputed to be a "biter" anywhere in the vicinity of the orchard or the patch, was an all-sufficient reason for us to walk in the path of rectitude,—at least as far as the next farm. Of one of these dogs the editor has a lively and painful recollection. It was rumored among us boys that his owner fed him gunpowder to make him sharp. As to the means, one may be permitted to doubt: of the result, the evidence was convincing. However, this does not injuriously affect the thesis; for the foraging expedition was undertaken at a time when we had every

reason to believe that the brute was from home.

Most of us who have served medical internships can readily recall how we thought that all the world was dying with pernicious anemia, cancer of the stomach, general paresis and dropsy. When we come out into practice it was a rarity to find a case of either. Must it not be true that doctors who spend their time among the mentally diseased come to think of insanity as far more prevalent than is really the case? Our lawyer friends tell us that the common law definition of insanity is an inability to distinguish between right and wrong. Our alienist friends tell us a lot more, but we never succeed in getting the straight of it.

Since a fixed rule of sanity has not been established, the decision going largely by majority opinion, the writer is disposed to say a word for the non-expert. In this position he is buttressed by the pronouncement of the Sage of Grace Street, Dr. Wm. H. Taylor, to the effect that any other man of sense was just as good a judge of one's sanity as a doctor.

It is lamentably true that in the trials of too many persons of influence, on whom crimes are proven, the opposing groups of alienists, testifying to flatly contradictory opinions, present spectacles which tend to diminish the prestige and influence of the medical profession as a whole and of its members as individuals.

If some arrangement could be made by which a group of three prominent specialists in this line, agreed on by attorneys for the two sides, and whose honoraria would be paid by the court, would supply all the *expert testimony* in any case; an "appearance of evil" would be removed, the medical profession would be saved from much humiliation, and the cause of justice would be materially advanced.

The certainty of severe punishment to follow speedily on the commission of a contemplated crime would stiffen many a wobbly resolution, and supply the only ingredient lacking for the making of

many into self-respecting and responsible citizens, who, without it, will in-

evitably be menaces to organized society so long as their lives last.

DEPARTMENTS

RADIOLOGY

JOHN D. MACRAE, M.D., Editor
Asheville

This new branch of medicine is scarcely thirty years old, but it has come to such a growth that every specialty, more or less, is dependent on it for treatment or diagnosis.

In therapy every tissue from the crown of the head to the soles of the feet is treated with x-rays; as for instance, the hair of the scalp is made to fall out and a temporary alopecia is produced in treating ring-worm of the scalp; while with the same agent plantar warts are made to disappear from the soles of the feet.

Diagnosis of soft tissue disease has become fully as important as the localization of foreign bodies or the study of fractures or abnormalities of bone.

The fact that radium and x-rays are used in such a numerous set of conditions has caused surgeons, internists and other specialists, as well as general practitioners, to use and to misuse these two great sources of radiant energy. Too often they have little or no appreciation of their powers for harm as well as for good.

I would not limit x-rays to those who practice radiology as a whole time specialty; but it is easy to see that, if one is to become expert in this field, he must make it the work of a life time, and that, if a physician is to use it as an adjunct to some specialty, he will have to give it much time and thoughtful study.

Misuse of x-rays is common when men, without having qualified themselves, assume an ability to interpret films. *The clinical study of a gastro-*

intestinal or pulmonary case makes an image in the mind of the examiner which is often read into the interpretation, while the condition actually depicted in the films is overlooked. Another deplorable misuse is practiced by those physicians or groups of medical men who, failing to appreciate the importance and difficulties of radiology, place their x-ray work entirely in the hands of technicians.

The development of extremely high powered x-ray machines has brought into existence a new type of "deep therapy" which is more powerful to attack malignant disease through many centimeters of normal tissue, and, by the same token, more powerful to harm the patient through destructive action on his protective and recuperative forces. A very desperate misuse of radiant energy occurs when over-enthusiastic and radical radiologists lose sight of the patient's welfare in their efforts to destroy cancer.

Unqualified users of x-rays and radium have not a full appreciation of their dangers and through mistaken interpretation cause suffering which could be prevented. Also their wrong applications in treatments may result in great disaster. As a consequence law suits are so often brought against radiologists that insurance companies charge those using x-rays and radium three or four times as much for personal liability policies as is charged other practitioners of medicine. No other than a graduate physician should attempt to do x-ray or radium work, and then not without understanding its dangers as well as its benefits.

UROLOGY

A. J. CROWELL, M.D., *Editor*
Charlotte

August von Wassermann

The death of Professor August von Wassermann on March 16, 1925, has deprived the medical world of one of its ablest investigators and the human race of a benefactor. Through his continued studies he has made several lasting contributions to the body of knowledge basic to general race betterment.

Wassermann was born February 21, 1866, at Bamberg, Bavaria. His father was a royal banker who gave his son the opportunity to gain a sound general and professional education. Wassermann studied medicine at the universities of Erlangen, Munich, Vienna and Strassburg, receiving his degree from the last named institution in 1888. He then became assistant for infectious diseases at the Koch Institute of the Charite at Berlin, gaining the title of professor in 1898. In 1901 Wassermann was given an appointment to the University of Berlin as Professor Extra-Ordinary (*Privatdozent*), a position carrying with it no emoluments outside of the opportunity to teach and experiment in the university medical school and its laboratories. Within a year his unselfish devotion and keen interest in the science of medicine brought him a full professorship. In 1906 he assumed the duties as head of the Division for Experimental Therapy and Serum Research at the Royal Institute for Infectious Diseases at Berlin. In 1913 he added to his duties those of director of the newly founded Kaiser Wilhelm Institute at Dahlem, near Berlin, an institute for experimental therapeutics.

As a mark of appreciation of beneficial public service the title of Secret Councillor (*Geheimrat*) was conferred upon Wassermann in 1907; he was also awarded the Japanese Order of the Holy Treasury, the Turkish Order of Ozman, the Spanish Order of Elizabeth the Catholic, and the Reichs Adler Order.

Professor Wassermann was a prolific contributor to medical literature. As an introduction to Ebstein and Schwalbe's Handbook of Practical Medicine he

has written an able discussion concerning general studies on infectious diseases, especially influenza. He was also a regular contributor to the *Eulenburg Encyclopedia*, writing on immunity and serum therapy. He published many articles on newer subjects, such as hemolysin and precipitin. His best known works are contained in the *Handbook of Pathological Microorganisms*, which he published in collaboration with Kolle.

Wassermann made a far-reaching and important contribution to forensic medicine by "his precipitin reaction which distinguishes the blood of men and animals by differentiating albumin bodies contained therein."

His greatest discovery, the complement fixation test in syphilis, was announced in 1906. This, the so-called "Wassermann Test," is an application to syphilis of a general reaction discovered by Bordet and Gengou.

An appreciation of the vast importance of the use of the Wassermann test as an aid in the diagnosis and treatment of syphilis may be gleaned from data collected and compiled by the Division of Venereal Diseases of the United States Public Health Service. The 165 laboratories of State Health Departments and State Institutions, scattered throughout every state in the Union and included in this investigation, administered 990,130 Wassermann tests in 1923. This figure, when reduced to more evident terms, means that these 165 state laboratories have given one Wassermann test per every 106 people in the United States. The importance of the Wassermann test is further enhanced by the fact that these figures do not include many Wassermann tests made by private laboratories.

Though Wassermann's name has been connected with important researches dealing with the problems of cancer and tuberculosis, he has enshrined his name in medical annals by virtue of his work in the diagnosis and treatment of syphilis. Wassermann, a distinguished pupil of Koch and Ehrlich, has earned the name of a great benefactor of humanity. —U. S. P. H. Service.

PEDIATRICS

FRANK HOWARD RICHARDSON, M.D., *Editor*
Brooklyn, N. Y. and Black Mountain, N. C.

Scarlet Fever Antitoxin

Dr. William H. Park, Director of the Bureau of Laboratories, presents the following interesting information:

Twenty-three years ago, Moser, a Viennese physician and serologist, published an article, describing the results following the use of immune horse serum in toxic cases of scarlet fever. He found that, as a result of injecting a combined streptococcus culture and streptococcus toxin into horses, some of these animals, after repeated injections, during a period of some months, developed in their blood serum antibodies to the toxins causing the rash and the constitutional disturbance in scarlet fever. At least the injection of the serum was followed by a rapid improvement in uncomplicated cases.

Five years later, Savenchko, a Russian, utilized the filtrates of toxic broth cultures, for the immunization of two horses and, later, added inoculations of the streptococcus. This serum also gave remarkable results.

The temperature, which in one case was 41 degrees C., dropped, in twelve hours, to 38.5 degrees C., and twelve hours later dropped to 37 degrees C. The dose injected was 90 cc. The patient, in question, sick one day, was apathetic, delirious, and very ill. In thirty-six hours, however, after the injection was given, the rash faded and the general condition improved remarkably.

These results, published in Austria and Russia, were generally overlooked in this country. It was not, however, until a year ago, that Dochez found, that by using his own special method of injecting living streptococci from scarlet fever cases into a mass of agar in the tissues, he produced a serum in a horse which, when injected intracutaneously, blanched the rash of acute cases of scarlet fever, and thus demonstrated that it contained a specific antitoxin for scarlet fever.

The results of the use of Dochez se-

rum have been given by Blake. Through the kindness of Dr. Dochez, we have been able to use his serum and have obtained favorable results in a number of cases in the Willard Parker Hospital, during the past year. A month ago, at the Department of Health Laboratories, we obtained a serum that was equal in potency to the Dochez serum, by treating horses with doses of scarlet fever streptococci toxin, in the same way as we treat horses with diphtheria toxin to produce diphtheria antitoxin. This was doubly refined in our laboratories by the Banzhaf method. Since then it has been used in ten moderately and very toxic cases. The results have been very striking. In the majority of the cases, the temperature dropped from 4 to 5 degrees within eight to twelve hours, and there was also a remarkable change in the general appearance of the patient. In the other cases, the results, while favorable, have not been so striking. At the present time, we have enough serum for all toxic cases, but refined serum only for the hospital cases. Within a few weeks, we expect to have a sufficient supply of the refined serum for all cases that are severe enough to require it.

The dose for a moderately toxic case is 15 cc. of the refined serum, and for very toxic cases, 30 cc. The unrefined serum is given intramuscularly in doses of 30 to 90 cc.

Give Diphtheria Antitoxin Promptly

In Alaska, it is necessary to call upon dog teams and aeroplanes to send antitoxin to sufferers from diphtheria. In New York, antitoxin may be obtained at any drug store, in twenty minutes. However, four-fifths of the deaths from diphtheria, in the Willard Parker Hospital, are due to the fact that patients have not received the life-saving antitoxin until five days or more after the onset of the disease.

For every day that antitoxin is delayed there is a 5 per cent increase in the mortality. Dr. William H. Park is authority for the statement that antitoxin has done no harm in 80,000 cases. Cultures are of value in proving a diag-

nosis, but they fail to show diphtheria, in 10 per cent of the cases. It is antitoxin which saves life, and it should be given in every case as soon as diphtheria is suspected or diagnosed. Yet the mortality recrods at the Willard Parker Hospital show that while New York City is far fro the frontier where dog teams and heroic efforts are necessary to furnish antitoxin before the fifth day of illness, there are many cases in which five days elapse before the life-saving antitoxin is given.

Every child with a fever should have its throat carefully examined and, if there is any membrane or exudate present, antitoxin should be given. If a child at night, has croup which persists the next day, antitoxin should be given immediately. If the doctor is in doubt, he should call for a consultation. If the family cannot afford the fee of a consultant, the Department of Health will send a diagnostician without charge. Remember, antitoxin is practically harmless, and there should be no hesitancy in giving it and in giving it early.

EAR, EYE, NOSE AND THROAT

C. N. PEELER, M.D., *Editor*
Charlotte

Effect of Tonsillectomy on Children's General Health

The operation for removal of tonsils and adenoids has become a very common one, so common that some men advocate a prophylactic operation. This should not be, for the removal of tonsils and adenoids will not prevent all sorts of ills. However divergent opinions may be, here it is conceded by all that a definitely diseased focus of infection should be removed, be it in tonsil, appendix, or elsewhere.

The real value of tonsillectomy can be determined only by repeated examination of children before and after operation. Dr. A. D. Kaiser, of Rochester, N. Y., has given very interesting data in such a study of 1200 children who have been operated upon as compared with the same number who had not been operated upon. These children had been examined in the schools

and all of them needed the operation. No consent was obtained from the parents and the children had continued along with those operated on. In the examination three years later, Dr. Kaiser considered three factors:

(1) The presence or absence of subjective symptoms referable to the throat.

(2) The incidence of infection.

(3) The state of nutrition.

With this information gotten from the study of 2400 children the following conclusions were arrived at:

(1) Tonsillectomy offers a child considerable relief from such common complaints as sore throat, head colds, and mouth breathing.

(2) It lessens the chances of having discharging ears and their complications.

(3) It assures some protection against glandular infection, but it is no guarantee against it, and it does not assure the immediate disappearance of large cervical glands.

(4) It does not influence favorably or unfavorably infections of the larynx, bronchi and lungs, as they occur equally in the two groups.

(5) It does not prevent scarlet fever or measles, but may influence the severity of the infections.

(6) It seems to lessen the incidence of diphtheria by removing soil suitable for the growth of the diphtheria bacillus.

(7) It has not influenced the incidence of chorea or rheumatism.

(8) It has shown a lessened incidence of heart disease over a period of three years.

(9) It has definitely reduced malnutrition in the group operated on as compared to the group that was not operated on.

J. A. M. A., 7-5-24.

SURGERY

A. E. BAKER, SR., M.D., *Editor*
Charleston

Acute Abdominal Conditions

The subject of Acute Abdominal Conditions comprises the most important

questions in surgery and medicine. Careful judgment and thoughtful consideration are essential in making a diagnosis. In majority of instances it is an end result of a chronic pathological process which has probably given evidence of its preexistent for a prolonged period.

This subject is ably discussed in a recent paper by John Deaver. The following is an abstract:

In most cases of acute conditions of the abdomen there is a history of a lesion such as chronic appendicitis, peptic ulcer, cholecystitis, pancreatitis, or hernia.

The more common causes will be recognized without difficulty if a careful study of the history and a well-conducted physical examination are made. The presence of acute abdominal pain in a patient who has had an abdominal operation should at once suggest intestinal obstruction. In the absence of a previous operation it should suggest disease of the appendix. Incipient pneumonia is another possibility.

In the majority of cases an acute condition of the abdomen is due to one of the following causes, given in decreasing order of their frequency: Appendicitis, cholecystitis, perforated duodenal or gastric ulcer, acute salpingitis, acute intestinal obstruction, ruptured extrauterine pregnancy, acute pancreatitis, acute hematogenous infection of the kidney, twisting of the pedicle of an ovarian cyst, acute diverticulitis, mesenteric thrombosis.

In an acute condition of the abdomen with diffuse peritonitis and absence of a suggestive history and a localized point for surgical attack it is best to defer operation and place the patient at anatomical and physiological rest.

The high mortality of acute conditions of the abdomen is due partly to a lack of intimate knowledge of living surgical pathology, partly to the placing of too much reliance on laboratory findings which do not always correspond to the clinical findings and partly to hesitancy in the adoption of radical measures in the hope that the patient will recover under so-called conservative treatment.

However, in such cases radical treatment is truly conservative because it conserves life. The time to operate in acute appendicitis depends, not upon the blood count, but upon the findings of the physical examination.

Acute diverticulitis of the sigmoid is differentiated with difficulty from acute pelvic diverticulitis. Acute perforating peptic ulcer, which occurs in from 15 to 20 per cent of cases of ulcer, is another common cause of acute conditions of the abdomen. In cases of perforated peptic ulcer there is a sudden onset of very acute abdominal pain followed immediately by board-like rigidity of the abdominal muscles. Chronic peptic ulcer, like acute appendicitis, is the surgeon's province.

Acute pancreatitis should be thought of in the presence of sudden severe abdominal pain referred to the epigastrium and followed by syncope and shock, persistent vomiting of small amounts of biliary material, a subnormal temperature, a rapid weak pulse, cyanosis of the face and extremities, and swelling and tenderness to pressure in the epigastrium.

In the treatment of acute conditions of the abdomen due to trauma with penetration of the abdominal wall and with or without serious symptoms, it is a sound surgical principle first to determine whether the peritoneal cavity is involved. This can be done only by exploration.

When there are signs of ruptured tubal pregnancy the author always operates at once and rarely has been obliged to give an infusion of salt solution. Abdominal protective rigidity with localized tenderness is an unmistakable sign of intraabdominal injury. If, in addition, there is flatness on percussion, with movable dullness and rapid pulse and other signs of internal bleeding, operation cannot be done too soon. The absence of vomiting should not lead to the belief that there is no internal injury.

In exploring a traumatized abdomen, when the source of hemorrhage is not apparent, it is good practice to examine first the liver and then the spleen, stomach, intestines and omentum, and to de-

termine whether a retroperitoneal organ has been ruptured.

The liver is injured by trauma more frequently than other organs because its tissue lacks elasticity. Lacerations of the liver can be sutured without much difficulty except on the inferior surface where packing is necessary. Rupture of the spleen is best treated by splenectomy.

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*
Charlotte

Foreign Bodies of Dental Origin in the Lungs

The analysis of cases made by E. G. Gill, Roanoke, Va. (*Journal A. M. A.*, Nov. 29, 1924), includes foreign bodies of the following types: teeth, dental burrs, gold crowns, dental plates, fillings, blade of forceps, plaster of Paris, hard rubber from dental mouth gas disks of Allen's dental cement, and nerve canal reamers. In seventy-six of the 117 cases, teeth were the foreign bodies. The right bronchus is the favorite site of lodgment, the ratio being 2:1. The majority of accidents occurred while the patient was under an anesthetic. The most constant and definite symptoms is a cough, which varies from an occasional one to one that is persistent and accompanied by profuse expectoration. In this series, sixty-four cases developed a cough as an early or a late symptom. The sojourn in the lungs of the foreign bodies presented in this series varied from four hours to thirteen years. In the case of thirteen years' duration, four false teeth on silver clamps were aspirated during a fit of coughing. Roentgen-ray examination was not made and bronchoscopy not attempted. The patient died. Of the 117 patients in the entire series, eighty-four recovered. The results were uncertain in nine, and there were twenty-four deaths. Fourteen patients died as the result of lung abscess, one following tracheotomy, three from symptoms simulating tuberculosis, one from bronchiectasis, one from pneumonectomy; in three cases, the cause of

death was not stated. Of the eighty-four cases in which the patients recovered, the foreign body was removed bronchoscopically in thirty-eight instances; it was coughed up in thirty-seven instances; it was removed by lower bronchoscopy through tracheal openings in five instances, and by successful tracheotomy in three, and one patient was relieved by artificial pneumothorax. Gill urges that in every operation about the mouth, care should be exercised to prevent infection. Symptoms in most cases are immediate; namely, cough, pain in chest and hemoptysis. Later symptoms may simulate pulmonary tuberculosis. Seven cases in this series were diagnosed as tuberculosis. Tuberculosis may coexist with lung abscess. Bronchoscopy is indicated in any case as a diagnostic measure if the history and roentgen-ray findings are not conclusive. When the presence of a foreign body has been definitely established, there is only one treatment—bronchoscopy. Expectant treatment is always hazardous, and lung abscess may develop at any time. Death is due in most instances to lung abscess, bronchiectasis and gangrene.

MENTAL AND NERVOUS

JAMES K. HALL, M.D., *Editor*
Richmond

In "Insanity and Criminal Law," 1923, the dean of American psychiatrists of the dynamic school has ably shown some of the defects of our present criminal law in so far as it is applicable to mental hygiene, and suggests a practical plan of betterment.

In the beginning, Dr. White states "The object of this book will be to inquire into the relations of psychiatry to the administration of the criminal law, more especially with the problem of expert testimony as it involves the mental state of the defendant in criminal proceedings."

In some circles the expert witness has fallen into disrepute because it is felt that he is a partisan attempting to make delivery of goods which have been purchased and paid for. This discredit-

ing of the expert causes the public to assume that "insanity" is used frequently as a plea to escape punishment.

Dr. White states "Not only do no criminals get off by the 'insonity dodge', but over 50 per cent of those who are convicted are suffering from mental disease or deficiency." Reports from Sing Sing, the Virginia State Penitentiary, and other prisons confirm this statement, and tend to prove that the error is in the opposite direction from that commonly supposed.

Showing wherein the popular idea is wrong Dr. White goes into the historical and sociological considerations, and human motives which lie back of the present situation. He concludes with practical suggestions for a better understanding and adjustment between law and mental medicine.

It is a book which will appeal to laymen, lawyer, physician and psychiatrist.

H. DeJ. Coghill.

LABORATORIES

HARVEY P. BARRET, M.D., *Editor*
Charlotte

The Relative Value of Various Methods of Estimating Hemoglobin

The estimation of hemoglobin is considered one of the most valuable of blood examinations. Many place it first in value. Since the relation of the percentage of hemoglobin to that of the red cells is of such importance in all anemias one could hardly consider the estimation of hemoglobin without the red cells, or the estimation of the red cells without the hemoglobin to be of very distinct value. Many methods have been devised for hemoglobin estimation. All methods have been both criticised and praised. These methods vary from those requiring expensive and delicate apparatus and a modern chemical laboratory to one requiring a single piece of blotting paper and a cheap, simple color scale. Of all the methods devised only three or four are suitable to the needs of a practitioner or clinical laboratory worker, and, at the same time, are simple enough for prac-

tical application where many hemoglobin estimations are made each day.

Four methods may be mentioned.

1st. The Tallquist Scale.

This is probably the most widely used and at the same time the most severely criticised of all methods. Where a physician or laboratory worker has to make many estimations each day, often in the patient's home, and necessarily cannot use one of the more elaborate and accurate methods this seems to be the most practical and at the same time most valuable method of all. It is true that an error of ten per cent may be easily made, nevertheless, a fairly accurate knowledge of the patient's hemoglobin may be obtained, and for all practical purposes this error is negligible. Any careful worker can soon train his eye to make estimations that will compare very favorably with those made with more complicated instruments.

2nd. Sahli's Hemoglobinometer.

This is considered by many workers to be the most accurate and practical of all the methods for the average person. The objections to it are many and are not sufficiently stressed by those favoring this method. In the first place it requires several minutes, not only for the actual estimation of hemoglobin, but also for cleansing the glass ware used. The use of several solutions, as well as the cleansing of the pipette and the instrument itself makes it impractical for use by the physician on his daily rounds.

In the second place it is almost impossible to obtain a reliable standard. The standards usually obtained from instrument dealers are almost invariably faded and give a reading much too high. When an accurate standard is available it soon fades and one is constantly required to check the standard with a normal blood. Numerous methods of making up standards are given in text books. The methods themselves are variable and the standards not lasting. Probably if a stable standard were available this method would be the most valuable for the clinical laboratory worker but not for the general practitioner.

3rd. The Dare Hemoglobinometer.

For the clinical laboratory and the general practitioner, this seems to be the most accurate, as well as the most practical instrument of all. It requires no solution as fresh blood is used. For cleansing, water or a damp cloth is the only requirement, and several estimations may be made in rapid succession. As the standard is made of glass it does not fade. Taken all in all this is the method of choice where accuracy as well as ease of procedure is considered.

4th. Newcomer's Method.

This method has come into use recently. The standard in this instrument is of glass and does not fade. For clinical laboratory work where a good colorimeter is available this is probably the most accurate method but is not suitable outside of the laboratory.

In conclusion we would say that for all practical purposes, where one wishes to get an idea of the patient's hemoglobin but does not care to know just what the exact per centage is, the Tallquist scale is the best method to use. If it is desired to know more accurately the percentage of hemoglobin a more elaborate and more careful method may be used.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
Charlotte

Coxa Vara in Adolescence

There is a pathological entity of vague onset and origin being seen rather constantly now, taken somewhat lightly in practice, treated insufficiently or not at all, and which is proving to be the source of many permanently lame and deformed hips. This condition, adolescent coxa vara, when recognized early, as it should be, forms another one of our easily preventable or correctable deformities. In the *Journal of Bone and Joint Surgery*, April, 1925, appears an article on this subject by Kidner, which is classical and clear, both as to recognition and treatment of this type of hip complaint.

The picture of the condition is essentially as

follows: At about the age of puberty, a healthy, but usually over-fat child, develops a limp. There may or may not be a history of a fall or strain, but it is rare that there is a history of severe injury. The limp is accompanied by some soreness in the hip or knee and by a disinclination toward the usual activities. "Leg-ache" after going to bed is frequently present. The symptoms rarely become sufficiently severe to incapacitate the child. If the parents are careful the child is usually taken to the family physician, who makes a diagnosis of a sprain or of rheumatism and prescribes simple remedies, thereby often lulling the family into a false sense of security, and they may do nothing more about it for a considerable period of weeks or months. Sooner or later the child is taken to some one who is sufficiently interested to make a complete and intelligent examination. It is then found that the child bears the carmarks of endocrine disturbance. There is abnormal fat, delayed genital development, mental heaviness, and general flabbiness of muscle tone. There is limitation of abduction and internal rotation in the affected hip and there is shortening of the leg of from one-half to one and one-half inches. There is no muscle spasm, pain, tenderness, or other sign of inflammatory disease or trauma.

Differential diagnosis must be made from tuberculosis, Perthe's disease, fracture of the neck, and traumatic separation of the epiphysis. This differentiation is easy if care in history taking, physical examination, and interpretation of roentgenograms is observed. Fracture and traumatic epiphyseal separation do occur in children, but their history is entirely different from that of coxa vara, and their physical examination is a picture of an acute injury.

The roentgenographic appearances in coxa vara are entirely dependent on the time elapsed since the onset of the trouble. They are

1st. Very early: A blurring of the epiphyseal line. A slight upward and backward displacement of the neck with regard to the head at the epiphyseal line. A sort of cupping of the head with rotation downward and backward of its articular surface. No change in the contour or structure of the neck.

2nd. Moderately advanced: Disappearance of the epiphyseal line. Further displacement upward and backward of the neck, which seems to be impacting itself in the further rotated head. No change in the shape of the neck. Slight absorption of lime salts in the head; less in the neck.

3rd. Late, after pain has disappeared: New deposit of lime in head and neck. Re-appearance of the epiphyseal line. New bone formation like callus, which is bridging across from the capsized head to the neck all around its periphery.

4th. Stage of completed process: Full union of the head with the neck. A truss or arch of new bone continuous from the lower edge

of the epiphysis along the lower surface of the neck for a greater or less distance. This distance depends on the amount of the original displacement.

A second truss or arch of new bone with convexity upward forms the upper union of head and neck. This gives the appearance of an actual bend in the neck of the femur, and I believe accounts for the frequently advanced theory that bending of the neck of the femur is responsible for the coxa vara. It also accounts for the description of the various types of the deformity, the epiphyseal and cervical types of Whitman. The trochanteric type of Froehlich is, I believe, an entirely different condition, due to rickets. The greater the original displacement the farther out on the neck the callus must extend and the shorter the arc of the arch found, but the greater the apparent involvement of the neck.

The foregoing represents, I believe, the development and mechanical explanation of the untreated case of coxa vara adolescentium.

There is no doubt in my mind what treatment should be. It should be the forcible abduction and internal rotation of the femur, as advised by Whitman, in an effort to pull the lower edge of the neck out of the impaction into the head, which results from the forward and backward slip of the neck. When this impaction is overcome the normal relation between the two is automatically restored, and pressure is removed from the epiphyseal line. This abduction should be held completely until such time as the roentgenogram demonstrates bony union. This may be three, six, nine or more months. With this treatment, the ob-

liquity and shape of the upper end of the femur can be restored and maintained, and a hip with perfect function obtained.

In the foregoing description of the production of the deformity it will be noted that the mechanical changes originate at the epiphyseal line. It is there that the fundamental displacement occurs, and there that repair begins. The deformities are all sequelae of disturbances of the epiphyseal line. Successful treatment restores the relation of the head and neck and removes pressure from the epiphyseal line, and gives it time to resume its normal function. If these statements are correct, then it follows that the cause of the disease is a disturbance of function of the epiphyseal line. Just what this cause is I am not prepared to state, but I believe it lies in some change of function in the endocrine system. This change of function interferes with the normal activity and growth and bone formation at the epiphyseal line. The result is that the weakened epiphyseal line gives way under the weight of the unusually heavy child. We are convinced that pituitary and thyroid medication has had a marked effect in hastening repair. The objection to this theory may be raised that a similar condition does not arise in other joints. This is easily answered by saying that the epiphyseal line of the upper end of the femur is the only one which has to undergo great and constant twisting strains in weight bearing. And if we care to wander still farther in the field of speculation, we may wonder if Kohler's disease of the tarsal scaphoid and metatarsals and Legg-Perthe's disease have not the same sort of explanation.

MISCELLANY

Reunion of ex-Army and Navy Doctors

An attractive feature of the Annual Meeting of the American Medical Association at Atlantic City will be the reunion of the medical men who served their country in the Army and Navy during the World War, to renew the memories, friendships and associations of those eventful days. The Chief Surgeon of the A. E. F. will be there, and the President of the Association of Military Surgeons, Surgeon General Hugh E. Cumming, and other officers of the Association under whose auspices the meeting will be held. An effort will be made to group together those who served in the same organizations and so it is requested that reservations be made as early as possible, and that com-

rades state in writing for them the base hospital or other medical unit to which they belonged. Write for tickets to Colonel Burt R. Shurly, Med-Res., U. S. A., 62 West Adams Ave., Detroit Michigan.

Time and Place—May 27th at 7 p. m. at the Ritz-Carlton Hotel, Atlantic City.

Members of the Association of Military Surgeons are requested to wear the badge of the Association

Birth and Death Rates

Washington, D. C.—The Department of Commerce announces that birth rates for 1924 were higher than for 1923 in 16 of the 25 states for which figures for the two years are shown in the following summary. The *highest* 1924 birth

rate (31.9 per 1,000 population) is show for rural districts of *North Carolina* and the lowest (14.9) is for rural districts of Montana.

Death rates for 1924 were lower than for 1923 in 23 of the 29 states shown for both years. In fact, record low rates appear for the following 13 States: Connecticut, Delaware, Kansas, Kentucky, Maine, Massachusetts, Montana, Nebraska, Ohio, Pennsylvania, Vermont, Virginia and Wisconsin. The six States having higher rates for 1924 than for 1923 are: California, Florida, Mississippi, Oregon, South Carolina and Washington. The highest 1924 death rate (22.1 per 1,000 population) is shown for the urban districts of Mississippi and the lowest (6.5) for the rural districts of Montana.

Infant mortality rates for 1924 are generally lower than those for 1923, as only 3 of the 25 states show higher rates in 1924. The highest 1924 infant mortality rate (121.6) appears for the urban districts of South Carolina and the lowest (51) for the rural districts of Nebraska. Infant mortality rates are shown for both years for 44 cities of 100,000 population or more in 1920. For 36 of these cities the 1924 infant mortality rates are lower than those of the previous year. The highest 1924 rate (92) is for Trenton and the lowest (45.3) for Seattle.

Comparative Rural and Urban Death Rates

Life is longer and health is better for those who live in the country and the smaller towns than for the city dwellers. The rural boy, at birth, has a life expectancy of 7 3-4 years more than his urban brother and the country girl may expect to live 6 years longer than the city girl. There are, nevertheless, a number of decidedly serious health problems for the rural population. In fact, for many important diseases the rural mortality exceeds the urban. The data for a long period of years show this clearly and are worthy of consideration.

Whooping cough is an interesting ex-

ample. In direct contrast to what happens for three other important epidemic diseases of childhood, measles, scarlet fever and diphtheria, the whooping cough death rate is higher, year after year, in rural districts than in the cities. We have never seen a satisfactory explanation for this phenomenon. There must be a definite cause for this curious fact, and possibly the determination of that cause would have an important bearing on the treatment of this disease and on efforts to prevent and control it.

In the case of cancer, the epitheliomata, or skin cancers, constitute a very interesting exception to what happens with respect to malignant growths in other parts of the body; for these cancers, in direct contrast to all others, show a much higher rural than city death rate.

In the case of tuberculosis the figures for disseminated or general tuberculosis show that this is an exception to what applies for tuberculous disease of the lungs and of other parts of the body for general tuberculosis is the single type whose death rate runs higher in the rural districts.

Deaths from smallpox are more numerous in the country and smaller towns. This is readily explained by the fact that vaccination is more generally practiced in centers of population where city boards of health cooperate actively with state health departments in arousing the population to the dangers of smallpox and the protection which vaccination affords. The facts for influenza are of exceptional interest; for the mortality invariably runs higher in the country. This applies not only to the great pandemics of 1918-1919 and 1920 but to the so-called "normal years."

Among the diseases of the circulatory system, angina pectoris seems to be the one condition which generally (although not invariably) records a higher rural death rate. Among the digestive complaints the relatively few deaths caused by intestinal parasites occur mostly in rural areas. After two years of age, diarrheal conditions are a more serious problem in the rural districts, in direct

contrast to what happens in infancy when the urban death rate approximates 50 per cent. in excess of the rural. Among the diseases of the genito-urinary system, bladder complaints alone register higher rural mortality. This is just the opposite to what happens for Bright's disease and other diseases of the kidneys. Among the diseases of the skin and cellular tissue, gangrene invariably has a higher rural death rate.

Among diseases incidental to pregnancy and childbirth, the relatively high rural mortality from the accidents of labor is difficult indeed to explain. Under this head, vital statisticians classify deaths where there is operative interference, such as Caesarian operations and other instrumental deliveries. We would rather expect a higher *urban* death rate because so many of these cases, among rural as well as urban women, are hospitalized in city institutions. It may be true that the higher mortality in rural districts is due to the fact that operative measures must be taken more often in the home where facilities are not as complete as in institutions.

Many more city dwellers than rural people commit suicide by taking poison, by inhaling gas, by firearms, cutting instruments and by jumping from high places, but the situation is reversed where hanging is the chosen method. Figures for eleven consecutive years without a single exception show this clearly.

Among accidental deaths, food poisonings, deaths in burning buildings, drownings, gun shot wounds, mining and quarry accidents, railroad accidents, deaths in landslides, injuries by animals, fatalities due to excessive cold and lightning are all more numerous in the country.

There are some diseases which show, year after year, relatively high rural mortality for perfectly obvious reasons. For example, there is typhoid fever, the control of which is now largely a matter of improving rural sanitation. In the case of malaria, practically all of the malaria breeding areas are in the

rural districts. The rural death rate for dysentery runs from two to three times that in the cities. This is due, in all probability, to the poor quality of the water supply in the country districts. Twice as many deaths occur from pellagra in the rural areas as in the cities. Chronic rheumatism causes more deaths in the country because mortality from this disease occurs largely among elderly people who have a higher representation in rural than in city populations. The same reason holds for apoplexy, softening of the brain and paralysis. General paresis, other mental diseases, and epilepsy show relatively high rural death rates because the majority of hospitals for the insane and feeble-minded are located in rural districts. Bul. Met. L. I. Co.

Bismuth in Syphilis

Dr. Herman Goodman and Dr. Lee Michel (*American Journal of Syphilis*) consider therapy and syphilis from the point of view of the individual patient. They have recently published a paper entitled "Treatment of Syphilitics." Among other recent drugs they write:

"Although Bismuth has been used experimentally in therapeutics for about twenty years, it is only recently that Levaditi and Sazerac have completed their very original work and perfected suitable bismuth compounds for use in human syphilis. Our experience with bismuth salts in the treatment of syphilis has been with the preparations vouched for by the originators for the method, namely trepol and neotrepol, and has been wider with the latter as neotrepol is an aqueous preparation suitable for intramuscular use, and attended by practically no pain or infiltrations if properly administered.

"Neotrepol is precipitated bismuth in an isotonic medium containing about 96 per cent of bismuth. It is a stable product and there is no danger of intoxication through change in its chemical composition. The special indication of neotrepol is for the latent syphilis, with no apparent clinical symptoms of the disease and a positive Wassermann.

Negative serological results have been obtained by the use of neotrepol sometimes in the so-called Wasserman-fast cases, that is, Wassermannfast to the arsenicals and mercurials.

"Although not 100 per cent efficacious, neotrepol is well worth inclusion in this paper on the adjuvant treatment of the syphilitic. By and side effects from the bismuth have been reported and also seen by us, in the form of bismuth mouth, but prophylactic use of mouth wash, tooth brush and dental care prevent the occurrence of bismuth mouth.

"They pass from the treatment of the syphilitic for his syphilis to the treatment of the patient when, as sometimes happens, the drugs used in the course of medication give serious ill-effects, as mercurialism or arsphenamine nephritis or arsphenamine dermatitis. Two drugs have most recently been strongly advised for these conditions, and we have experience with both. Contramine is a preparation of McDonagh of London, England. It is a white crystalline substance basic in reaction and soluble in water 1 in 2.5. It does not undergo change on exposure to air. For therapeutic purposes it may be injected intramuscularly or intravenously, or it can be used as a local application. The outstanding indication for contramine is as a preventive therapeutic drug for metallic intoxication of any origin. Contramine is given intramuscularly in doses of 0.25 gm. but .5 gm. may be injected with impunity. The contents of one of the tubes or of the two tubes, according to the case is dissolved in 1.5 or 2 c.c. of cold sterilized water or normal sterilized saline. Contramine dissolves quickly and on no account should the solution be heated. As contramine is quite painless and is readily absorbed it may be injected in any site.

"Used intravenously it is unnecessary to inject more than 0.25 gm. except in very acute cases of metallic poisoning. This quantity should be dissolved just before use in 10 c.c. of sterilized normal saline containing 10 per cent of pure glucose. The addition of the glucose

slightly lessens the therapeutic effect of the contramine, but it prevents the unpleasant odor and transitory nausea which a patient may experience, especially if he has had a meal just previously.

"Locally contramine may be used either in concentrated solution in normal saline or the crystalline substitute may be applied twice a day until the area about the part treated shows signs of local inflammation.

"Injections are given every third day until six have been administered. In the mild cases, two injections once a week, each of 0.25 gm. will usually suffice. In no ordinary case should more than three injections be given unless an interval of two months has intervened."

Research on the Stability of Mercurochrome Solutions

The statements of various authors regarding the stability of mercurochrome solutions have been investigated by Loeser, Hamburger, and Konwiser. In experiments extending over a period of nine months, an intravenous solution of mercurochrome, 220, has been thoroughly investigated.

It has been demonstrated that a 1 per cent solution, prepared by the Loeser method, remains stable over a long period of time in hermetically sealed, non-soluble glass ampoules. At monthly intervals the solution was injected into white rats intravenously, while control animals were injected with a freshly prepared solution. These tests show that no change had taken place in the solution, and that the toxicity had not increased after nine months. Bactericidal tests made with this solution, when six months old, indicated that there was no loss of bactericidal power.

These tests were part of the experimental work of preparing a standardized, biologically tested, stable 1 per cent solution of Mercurochrome. To be offered to the physician in 20cc. ampoules ready for injection. Clinical data and therapeutic references have been gath-

ered for distribution by the New York Intravenous Laboratory, 100 West 21st Street, New York City.

1825—The Jefferson Centennial—1925

"Old Jeff" will celebrate her one hundredth birthday at the end of the present session. May 29th has been designated Alumni Day. The Alumni Association is completing its plans to make this a day long to be remembered by the "old grads," who reassemble to pay homage to their Alma Mater and to greet old friends. May 29th is particularly suitable and convenient because it is the closing day of the American Medical Association Convention in Atlantic City. For the convenience of alumni there will be at Atlantic City near the Registration Desk a Jefferson Alumni Secreary who will make hotel reservations, receive subscriptions, supply information, or attend to any other matter concerning Alumni Day and the Centennial Celebration.

The headquarters of the celebration will be the new Benjamin Franklin Hotel at Ninth and Chestnut Streets. Various classes will have special rooms for headquarters. Many classes will hold luncheons in the hotel, as indicated elsewhere in the present issue of the Bulletin.

During the forenoon of Alumni Day the time will be devoted to registration, visiting the various College Departments where members of the teaching staff will personally meet the visitors, ward walks with the staff of the Jefferson Hospital, informal clinics, and inspection tours of the new hospital. At one o'clock special class meetings and activities will take place and will occupy the luncheon period and afternoon.

In the evening the Annual Banquet will be held at the Benjamin Franklin Hotel in the beautiful Crystal Ball Room, the largest banquet room in Philadelphia. The list of speakers will be an exceptional one, comprising distinguished graduates, the names of whom, however, the entertainment committee desires to keep in reserve as a surprise. It is known, however, that

the distinguished Surgeon General of the U. S. A., Merritte W. Ireland, class of 1891, will be among the speakers.

The menu and the decorations will be especially attractive. In addition, a souvenir commemorating the occasion will be presented to all who attend the dinner.

From all parts of the country come words of enthusiastic support in the effort to make the Jefferson Centennial Day the biggest event in the history of the Alumni Association. From New England a special train will carry Jefferson men to Philadelphia. Western Pennsylvanians are planning a motor trip. On the Pacific Coast a special car has already been engaged to transport loyal Jeffersonians east for the centennial occasion.

There is every indication that the Centennial Reunion will be the largest of its kind ever held. The slogan is, *BACK TO OLD JEFF AT CENTENNIAL TIME.*

ABSTRACT of paper on "The Transplantation of Distant Skin Flaps for the Cure of Intractable Basal Cell Carcinoma," read at the meeting of the American Surgical Association, Washington, D. C., May 5, 1925, by J. Shelton Horsley, M.D., Richmond.

The pathology of basal cell cancer is discussed. There is marked variation in the morphology and structure of certain types of basal cell cancer, from the common closely packed masses to columnar cells arranged as acini. It is suggested that the cause of this variation is that basal cell cancer, being derived from the deep layers of the epidermis, is more closely akin to the hair follicles and sweat and sebaceous glands, which also arise from the deep layers of the epidermis, than spinous cell cancer which begins in the superficial layers. Therefore reversion to gland structure would be more likely to occur in basal cell cancer than in spinous cell cancer.

The rarity of metastases of basal cell cancer is noted. Spinous cell cancer, especially in the more malignant formes,

metastasizes readily in the lymph nodes, but basal cell cancer seems to require for its progress a breaking down of the resistance of the adjacent normal tissue, probably by some substances elaborated during its growth. As basal cell cancer occupies areas that are frequently attacked by spinous cell cancer, the cells of a basal cell tumor doubtless have access to the same lymphatics and blood vessels as would the cells of a spinous cell tumor. It is reasonable to assume that these basal cells are transported, but they do not survive because the resistance in the distant tissue inhibits their growth. It seems logical, then, to transplant distant tissue to cover the raw surface left by excision of an intractable basal cell cancer with the expectation that such a flap will tend to prevent recurrence.

Ten cases of intractable basal cell cancer, treated according to the principle of transplanting distant flaps over the area left after the cancer has been excised, are reported. There was recurrence in five of these ten cases, but in no instance was the recurrence in, or in immediate proximity to, the transplanted distant flap. In all of the recurrent cases the cancer was excised and there has been no further recurrence in three cases, while in two where it was difficult to adjust the transplanted flap to the wound the cancer continued. On the contrary, in a patient in whom a distant flap was transplanted in order to cover the raw surface after excision of an extensive spinous cell cancer a recurrence appeared under the flap and quickly invaded the flap. In most basal cell cancers in early stages simple methods of excision with a knife, cautery or paste, or treatment by roentgen-ray or radium, are usually effective, but in a few instances these measures do not avail. It is in these intractable cases that a thorough excision, preferably with the electric cautery, and transplantation of a flap from a distance afford an opportunity for cure after other methods have failed. The principle of the operation is to transplant distant tissue to cover basal cell cancer in that it does not metastasize.

Hospitalization of War Veterans

Notwithstanding all that has been said and written about hospitalization of disabled American War Veterans, few individuals in the United States today have any definite idea of the elaborate hospital program that the U. S. Veterans Bureau is carrying on.

Already operating forty-nine hospitals, 74 dispensaries, ninety-four clinical laboratories, about 100 x-ray laboratories, and housing over 29,000 patients, the Bureau is constantly constructing and opening new hospitals and incorporating additional facilities in those already open. These hospitals are as modern and complete as science and careful planning can make them and no detail of utility or convenience is sacrificed to a false prompting toward economy.

In order that the medical authorities of the hospitals may be enabled to give their undivided attention to the care and treatments of patients the Director has established a business manager in each hospital to look after the financial and economic affairs of the institution.

The generous provisions of the Reed-Johnson Bill have permitted the Bureau to open its hospitals to veterans of any war in which the United States has participated since 1897 and already over 2,000 have availed themselves of this benefit showing plainly the acute need for such assistance.

In planning the hospitals, not alone is the medical care of the men considered, but recreational and entertainment features are also provided, chief among which latter are the radios which are installed in all Veterans' Hospitals as rapidly as suitable equipment can be obtained.

In order to secure for the Bureau the greatest possible efficiency in medical service the Director has assembled a body known as the Medical Council which is composed of thirty of the leading specialists of the United States and which meets at his call to counsel and advise with him and the Medical Director in all matters pertaining to the medical care and treatment of the disabled.

The Director feels that it is much more a service to give a man back his health and with it his economic independence than it is merely to maintain him in a hospital and pay him compensation. Therefore, this feature is a significant step in demonstrating his theory that cure rather than money compensation should be the chief endeavor of the Bureau.

In this theory the Medical Council heartily concurs and in accordance with this policy a hospital's efficiency is measured by its accomplishment in recoveries of the disabled.

In many of the Bureau hospitals the men find much pleasure, healthful exercise and recreation in the planting and tending of truck and flower gardens. This occupation is always encouraged and provisions for various other forms of occupational therapy are constantly being developed in the hospitals.

In a great many of the hospitals, a small weekly or monthly paper is edited and published entirely by the patients and personnel and many of these papers show genuine merit in carefully prepared articles which are a faithful reflection of the fine spirit prevailing in the hospitals, as well as many amusing little local squibs which record the daily life at these great institutions.

New York City Motor Tourists' Camp

Automobile tourists of this section will be gratified to know that at last New York City has a motorists camp.

Known as Camp New York it is established well within the city limits, being but thirty minutes from Times Square by rapid transit with a station directly at the camp entrance.

Its forty beautiful acres of high ground are situated at the junction of Boston Post road and Baychester avenue, with ample room for a thousand cars, or a daily accommodation for five thousand people.

Developed by a group of experts, nationally known in motor touring circles, nothing in equipment has been overlooked in this camp to add to the comforts of the visitor.

Among the conveniences included are a general store, restaurant, American Automobile Association Information Bureau, spacious community house, city water, sanitary toilets, shower baths, day and night police protection, electric lights, telephone, telegraph, a twenty-four hour laundry service, daily postoffice delivery and newspaper service, milk, bread, meat and vegetable service, tent platforms and bungalows.

There are also a children's playground, library, dancing pavilion, motion picture and radio entertainment.

The camp overlooks Long Island Sound, and Pelham Bay is but a mile distant and famous for its salt water bathing, boating and fishing. Bronx Park with its renowned Zoological Gardens and Botanical Gardens is near by.

The establishment of Camp New York now enables the visiting motorist to economically visit New York, the Wonder City of the World, and with his entire family inspect its museums, parks, libraries and historical places of interest. It assures him comfortable, safe and hygienic living conditions with police protection for his family and car at no extra cost, aside from the small daily camp fee.

On May 2, Camp New York was officially opened with befitting civic ceremonies.

A Miniature Model Playground

A miniature model of a five-acre playground for city children has been constructed for the Children's Bureau of the U. S. Department of Labor and will be displayed as part of the bureau's exhibit at the International Council of Women, meeting in Washington this Spring.

The model, planned by the Recreation Expert of the Children's Bureau, is an exact reproduction to scale of a playground adequately equipped for daily use by approximately 300 boys and girls. It contains a miniature swimming pool, a shelter house, two tennis courts, a basketball court, a large baseball diamond, a smaller diamond, a wading pool for little children, seats for

the story hour, swings, ladders, flying rings, sand boxes, and all other needed equipment. Tiny figures of children engaged in the various sports are part of the model.

The model playground was constructed by a well-known sculptor and model maker and is similar to one made for the bureau by the Reproduction Plant of the War Department and exhibited at the Fourth Pan American Child Welfare Congress held last fall in Santiago, Chile. The model sent to Santiago aroused so much interest among the South American audience that funds were raised to keep it on permanent exhibition there.

The model is on permanent display at

the Children's Bureau in Washington, and *will be available for loan to important child-welfare conferences or exhibitions.*

service in New Haven, Conn., where he won "honorable mention" in the report of the C. O. for his service there. Following the armistice, young Harley entered the medical school of Yale University from which he graduated M.D. in 1923. Study as an interne in a N. Y. City hospital followed for two years, when, he announced himself recently, as now ready to take up his cherished-from boyhood ambition to be a medical missionary and was assigned to the African mission.

NEWS ITEMS

Dr. George Way Harley

The *N. Y. Times* of recent date advises of the sailing, accompanied by his wife, of Dr. George Way Harley, for Liberia, Africa, where they engage in the service of the Board of Foreign Missions of the Methodist Episcopal church South, as Medical Missionaries for an indefinite period. Dr. Harley is a grandson of the late Maj. Chas. Burr Way of Grace, Buncombe County, a nephew of Dr. J. Howell Way of Waynesville, and a son of the Rev. Geo. Harley, of the S. C. Methodist Conference. He received his preliminary education in the Asheville schools, later graduating in 1916 an A. B. at Trinity College (now Duke University), Durham, N. C. The following year he assisted the chair of chemistry in his alma mater, graduating, a few weeks after war was declared by the U. S. against Germany, with the degree of A.M. He immediately volunteered, was sent to Oglethorpe Training Centre, transferring soon after to the Chemical Division and was engaged with other chemists in the working out of the "poison-gas problem" in the U. S. Army

association of Dr. E. H. E. Taylor with the institution as assistant resident physician.

Attention is called to the completion of two new buildings which afford ample facilities for the classification of patients.

American Board of Otolaryngology.

The next examination conducted by the American Board of Otolaryngology will be held at the Ambassador Hotel, Atlantic City, on Tuesday, May 26, at 9 a. m.

Application blanks may be obtained from Dr. H. W. Loeb, Secretary, 1402 South Grand Boulevard, St. Louis, Missouri.

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Dr. E. H. E. Taylor.

Broadoaks Sanatorium, Morganton, N. C., announces to the profession the

REVIEW OF RECENT BOOKS

A TEXT-BOOK OF HUMAN PHYSIOLOGY INCLUDING A SECTION ON PHYSIOLOGIC APPARATUS. by Albert P. Brubaker, A.M., M.D., LL.D., Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College; Formerly Professor of Physiology in the Pennsylvania College of Dental Surgery; Formerly Lecturer on Physiology and Hygiene in the Drexel Institute of Art, Science, and Industry. Eighth Edition. Revised and Enlarged with 367 Illustrations. Philadelphia. P. Blakiston's Son & Co., 1012 Walnut Street.

A few days ago in a conversation with the reviewer, a prominent practitioner who is especially interested in diseases of the nervous system made the remark, "I didn't know anybody studied physiology any more." Certainly that is, to a great extent, deplorably true. And that is one of the main factors,—probably outweighing all others,—in the explanation of the popularity of half-baked theories of diagnosis and therapy.

Brubaker's is a physiology which gives the essentials of the anatomy and histology of the subject being discussed in an arrangement facilitating the understanding of the function. This is particularly true of the chapters dealing with the nervous system and the special sense organs, these being remarkably lucid. The work makes a valuable addition to literature on diagnosis.

FEEDING, DIET AND THE GENERAL CARE OF CHILDREN. A Book for Mothers and Trained Nurses. By Albert J. Bell, A.B., M.D. Assistant Professor of Pediatrics in the Medical Department of the University of Cincinnati; Attending Pediatrician to the Cincinnati General Hospital, The Tuberculosis Hospital and the Christ Hospital; Member of the Medical Milk Commission, and Chairman of the Divisional Council on Child Hygiene, Cincinnati, etc. Second Revised Edition. Illustrated. Philadelphia. F. A. Davis Company, Publishers.

A sentence in the preface catches the eye; "The author has tried hard to avoid an error common to many books, which assumes that the knowledge which should be imparted is already known." Following out this idea, the book is definite and detailed.

CLINICAL MEDICINE FOR NURSES. by Paul H. Ringer, A.B., M.D. Chief of Medical Service of the Asheville Mission Hospital, Asheville, N. C.; on staff of Biltmore Hospital, Biltmore, N. C. Illustrated. Second Revised Edition. Philadelphia. F. A. Davis Company, Publishers.

Dr. Ringer has exercised wise discretion in including and excluding bearing in mind that the nurse must not only be instructed in the care of an ill person but must also pass examinations before Boards.

THE TECHNIC OF LOCAL ANESTHESIA, by Arthur E. Hertzler, A.M., M.D., Ph.D., LL.D., F.A.C.S. Professor of Surgery in the University of Kansas; Surgeon to the Halstead Hospital, Halstead, Kansas; to St. Luke's Hospital and St. Mary's Hospital, Kansas City, Missouri; and to the Providence Hospital, Kansas City, Kansas. Third Edition. With 140 Illustrations. St. Louis. The C. V. Mosby Company, 1925.

Local anesthesia has come into so great popularity in the last few years as to renew the interest of all medical men. Some reports from South America three years ago indicated that surgeons there were using local anesthesia in far larger a percentage of their surgical work than were those in this country.

"In presenting a new edition of this little book on Local Anesthesia the aim has been to retain the general plan of the previous editions. The technic of local anesthesia has now been standardized, so that the essential features can be presented in small space. It has been my aim, however, to present the technic I have found useful without any attempt to conform to the technic of others.

It is now generally known that any operation can be done under local anesthesia, hence the striving after melodramatic effect, by presenting pictures of patients wearing a **smile** while their guts are being slashed about, in order to impress the reader with the scope of local anesthesia, is no longer required.

Since the planning of the operation is more difficult than the technic of anesthesia, I have endeavored to present the difficulties likely to be encountered in order that the beginner may take stock so as to determine whether or not his experience warrants the undertaking.

I have also attempted in a general way to present the indications for the use of local anesthesia. It is not a stunt to be performed as athletic event, but it is to be selected only in so far as it is the best for the patient. It is the proper selection of method that marks the skilled surgeon and not his ability to do certain things with local anesthesia.

In hewing to these simple narrow lines I hope that this little book may continue to find a place in a field now occupied by many larger and more pretentious books."

CLINICAL THERAPEUTICS. I. Therapeutic Agents; II. Therapeutic Procedures; III. The Treatment of Symptoms; IV. The Treatment of Diseases. By Alfred Martinet, M.D., Paris, France. With the Collaboration of Drs. Desfosses, G. Laurens, Leon Meunier, Lomon, Lutier, Martingay, Mougeot, Saint-Cene, Segard, and Terson. Authorized English Translation from the Second Revised and Enlarged Edition by Louis T. deM. Sajous, B.S., M.D. Associate Professor of Experimental Pharmacology, School of Medicine, Temple University; Instructor in

Endocrinology, Graduate Medical School University of Pennsylvania, Philadelphia. With 332 Text Engravings. Complete in Two Royal Octavo Volumes. Philadelphia. F. A. Davis Company, Publishers, 1925.

The introductory remarks lay the groundwork of an unusual plan which is carried out throughout the two volumes. While it is admitted that therapeutics is, in some respects, an art, it is maintained that, in others, it is a true science.

The classification of new drugs in use into accepted and still on trial, and of old ones, from the standpoint of usage as stationary, decreasing rapidly, decreasing slowly, increasing rapidly, increasing slowly, and fluctuating is of great interest.

An unusual feature is the description of the use of magnesium sulphate by hypodermic injection for purgation. The dose given is about 1 per cent of that ordinarily given by mouth.

It is to be noted that the endocrine glands derivatives of only the pancreas, thyroid, pituitary and parathyroid are regarded as of great consequence. In the table (Sley) given the only other three suggested are the adrenal for Addison's disease (with an interrogation point), liver for a certain kind of hemophilia, and interstitial glands for infantilism of testicular origin.

Although the therapeutics of climate is given much value it is clearly stated that no disease has any specific climate.

Heliotherapy and psychotherapy are given a few pages. Local measures such as blistering, cupping, cauterization, use of the seton, injections of oxygen, leeching and puncture of the pericardium are minutely described.

The second volume deals largely with the treatment of diseases. It is a conservative, reliable text rather pungently phrased and containing recommendations of some drugs little used in this country.

The great interest now widely manifested in carbohydrates and lipoids is reflected in the careful dealing accorded these subjects. Vitamines are succinctly dealt with. The chapter on the "Acid-base Equilibrium" gives the essentials for an understanding of the much talked-of acidosis.

The clinical viewpoint is kept constantly in mind.

ABT'S PEDIATRICS (Volume VI). ABT'S PEDIATRICS. By 150 specialists. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totaling 8000 pages with 1500 illustrations, and separate Index Volume free. Now ready—Volume VI containing 736 pages with 127 illustrations. Philadelphia and London. W. B. Saunders Company, 1925.

This volume deals with many of the infectious diseases to which childhood is peculiarly susceptible and with others from the viewpoint of the pediatricist, also with others such

important matters as heat regulation, anesthesia—general, local and spinal, and from the medico-legal aspect, and the peculiarities of surgery in childhood.

The chapter on Acute Rheumatic Fever in Children discusses this extremely important subject in a terse and practical manner for ready reference. A complete bibliography at the end of the chapter affords means for going into it exhaustively. Under diphtheria, the results of antitoxin treatment, the Schick test and toxin-antitoxin immunity are given very fully.

Recent additions to the knowledge of whooping-cough and scarlet fever, as regards etiology, and treatment,—prophylactic and curative,—are emphasized.

It is pointed out that small-pox is still a disease of importance with us, a review of the vaccination laws of many other countries being given to show how far behind we lag.

The information given on anesthesia from both the medical and legal viewpoint is well worthy of careful consideration.

ELEMENTS OF ENDOCRINOLOGY WITH SPECIAL REFERENCE TO THE TROPICS, by Santosh Kumar Mukherji, M.B. (Cal. Univ.) Editor, "Indian Medical Record"; Author of "Infantile Cirrhosis of the Liver," etc. Indian Medical Record Book Department, Calcutta.

The subject is introduced with a review which includes some references to Hindu medicine of very great interest. Also, it is related that the Chinese, "For liver disease prescribe an extract of pig's liver with ox-bile and vinegar. Pig's lungs are used for chronic bronchitis. Desiccated placenta is prescribed in prolonged labour to facilitate child-birth."

The inter-relation between the different neodocrines is discussed in an entertaining and instructive manner.

It would seem that the suggestion as to **pluriglandular therapy** is a bit broad.

Diseases of the thyroid and para-thyroid are given in all their essentials in a very small compass.

Preparations of the suprarenal glands are recommended, but without any enthusiasm, for chronic weakness.

The anterior lobe of the pituitary "is used in cases of defective development and in impotence."

Extracts of the spleen, testis, ovary, corpus luteum and placenta "may be given," "are given," or "have been given."

In general it may be said that the work is a well written and arranged summary of our present knowledge of the functions and diseases of the endocrines, their therapeutic value with few exceptions, being viewed with wholesome scepticism and regarded as entirely unproven.

INTERNATIONAL CLINICS. A Quarterly by Leading Members of the Medical Profession Throughout the World. Edited by

Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A. Volume 1. Thirty-fifth Series, 1925. Philadelphia and London. J. B. Lippincott Company, 1925.

Dr. Lewellys F. Barker has an illuminating lecture on functional nervous maladies, in which he attempts to place the responsibility for the various culs. He deplores the lack of interest shown in this class of patients and outlines a plan of treatment based on a sympathetic understanding.

Our old friend "Group Medicine" is up for consideration anew. Something out of the ordinary is "Exophthalmic Goitre in Children" by James Burnet, M.D., F.R.C.P., Edinburgh, Scotland.

"A New and Effective Method of Treatment of Chronic Suppurations" and "Death from Tobacco" attract the attention.

A summary of medical progress in medicine for 1924 completes the volume.

THE SURGICAL CLINICS OF NORTH AMERICA. February, 1925. Volume 5—Number 1. New York Number. Philadelphia and London. W. B. Saunders Company.

Unusual subjects or those of especial interest in this number include "Chemism of the stomach after operation," "Uretero-vesical anastomosis," "Harris Bands," "The Icterus Index," "Urinary Incontinence in Women," and "A Survey of Roentgen Therapy."

THE MEDICAL CLINICS OF NORTH AMERICA. March, 1925. Philadelphia and London. W. B. Saunders Company.

In this, the Boston Number, Dr. Henry A. Christian discusses the similarity between pernicious anemia and polycythemia, a matter which he touched on in an original article in this journal in February.

"The Problem of Rheumatism" is rather summarily dealt with and disposed of.

Dr. Fitz has an article on diabetes and one of the cases reported is a "possible" one of Cerebral Glycosuria.

Under "Venous Pressures: Their Clinical Significance," Dr. Hermann L. Blumgart says "The high venous pressures * * * * indicate that the heart is incapable of maintaining the rate of blood flow necessary for the needs of the body."

There is a description of a "Case of Streptococcus Septicemic Treated by Intravenous Medication." Gentian-violet was the medication used and the result recovery. Dr. Joseph T. Wearn has an instructive clinic on angina pectoris.

PRINCIPLES OF SURGERY FOR NURSES, by M. S. Woolf, M.A., B. Sc., M.R.C.S. (Eng.) L.R.C.P. (Lond.) Instructor in Surgery, and Visiting Surgeon to Out-patients, University of California Hospital, San Francisco; Instructor in Surgery, and Visiting Surgeon, Children's Hospital, San Francisco. Illustrated. Philadelphia and London. W. B. Saunders Company, 1925.

A brief historical survey of surgical achieve-

ment is made to give the back-ground of which nurses are especially in need. Much attention is devoted to contusions, sprains, etc. Definitions are given in the text which will make them more readily remembered. The chapter on anesthesia is not written with the idea of making an anesthetist of a nurse.

The summary at the close of each chapter is a feature of much value.

THE TREATMENT OF THE COMMON DISORDERS OF DIGESTION. A Handbook for Physicians and Students. By John L. Kantor, Ph.D., M.D. Chief in Gastrointestinal diseases, Vanderbilt Clinic, Columbia University; Associate Gastroenterologist and Associate Roentgenologist, Montefiore Hospital for Chronic Diseases, New York City. Illustrated. St. Louis. The C. V. Mosby Company.

General principles and methods are given first, then the functional disorders, then the organic conditions. Functional disorders are defined as those due to disturbance of the nerve control of digestion. Under drug therapy—"The use of 'tonics' such as strychnine can hardly be recommended.

Poses are given much prominence and abdominal supports recommended invariably. Strict regularity of habit is urged if we would avoid constipation.

For headaches associated with indigestion various managements are recommended according as the origin is supposed to be neurasthenia, auto-intoxication, migraine or pituitary disease.

TRANSACTIONS OF THE THIRTIETH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY, IN. Held in St. Louis, Mo., May 29th, 30th, and 31st, 1924. Published by the Society.

The President's address deals with the literature of society and he undertakes to determine what the society has done for medicine in all its branches. Some two hundred members have their achievements recounted.

Practically the whole of the specialty is dealt with from at least one angle, including normal and abnormal, local and general, historical and prophetic.

PSEUDO-APPENDICITIS. A Study of Mechanical Syndromes of the Right Lower Quadrant Simulating Appendicitis, by Thierry de Martel, Chirurgien Des Hopitaux De Paris, and Edouard Antoine, Medecin Des Hopitaux De Paris. Authorized Translation from the French by James A. Evans, A. B., M.D. Formerly Assistant Radiologist Hospital St. Antoine, Paris. Preface by R. Bensuade, Medecin Des Hopitaux. Illustrated with Forty-one Engravings. Philadelphia. F. A. Davis Company, Publishers, 1925.

One might be disposed to object to the title were it not that "pseudo-diphtheria" appears

to have fixed itself in our language. Anyhow, it must be borne in mind that the authors do not mean to include under this term anything which is called appendicitis which is never proven not to be appendicitis.

In cases called "chronic appendicitis" dissatisfaction with the results and the necessity for more careful study are noted.

A case is cited in which a woman was subjected to four unnecessary operations, beginning with appendectomy. Then the question is asked; "would it not have been wiser to have commenced by carefully examining the patient before operating four times?"

A series of 124 cases studied over three years presenting pain in the right flank are analyzed.

A LABORATORY MANUAL OF PHYSIOLOGICAL CHEMISTRY, by Elbert W. Rockwood, M.D., Ph.D. Professor of Chemistry and Toxicology in the University of Iowa; Author of an Introduction to Chemical Analysis for Students of Medicine, Pharmacy and Dentistry and Paul Reed Rockwood, M.D., Fellow in Medicine, The Mayo Foundation. Fifth Edition. Illustrated with Four Colored Plates and Forty-three Text Engravings. Philadelphia. F. A. Davis Company, Publishers.

This volume is designed as a text-book for students; however, as so much of physiological chemistry is new matter no apology is necessary in recommending such a work to doctors.

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Dr. J. W. Long, Greensboro, N. C., will pay liberally for copies of the Transactions of the North Carolina Medical Society for the years 1877, 1878 and 1880.



Wm. de B. Schindler

Southern Medicine and Surgery

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No. 6

ON THE PURPOSES AND DUTIES OF THE SECTION ON MEDICINE

How Can We Best Fulfill Them?*

Charles L. Minor, M.D., Asheville

In choosing this subject for my address today some may think me rash; but I feel that the subject so closely concerns the good of the North Carolina State Medical Association and its influence on the development of medicine in North Carolina that it is a duty to consider it, even at the risk of raising antagonism among some men whom I respect and like.

The critic is never a popular person, (especially if he is of the family) and yet, without his often irritating services, it is doubtful whether the world would have advanced as it has done.

Gifted (or cursed) with an analytical way of looking at things, he is constantly studying to see in what way they can be improved and while, especially by the advocates of "things as they are," he is apt to be called a knocker, he at least makes us open the doors of our minds, to see what is outside and to let in fresh air, and his criticisms tend to keep us from falling into that lazy self content which is so deadly a foe to all progress and the sure beginning of deterioration.

The purposes of the Section on Medicine may be variously viewed by men of different minds; to a few it is the means of self glorification or the winning of empty honors. But the wide awake doctor, who is interested in the Society, and who is anxious to keep in touch with the latest things in medical

progress, looks upon this section and on the society as a whole, as a source of stimulus to his mind and to the minds of the men who attend it, and to those who read its transactions, and if the programs are carefully built up, as they should be and easily can be, every meeting should be a source of untold uplift to the doctors of this state and its transactions a worth while record of the progress of N. C. medicine. Further, if they are sure that they will and can get such programs, there will be no difficulty in having crowded and successful meetings. After many years of membership in many medical associations, I can safely assert that no society was ever a failure when the men attending it were sure of hearing live, interesting, well written and well delivered papers, and that, conversely, no society's meetings, it matters not who may be elected to its offices, are ever a success where the program is such as to fail to excite the interest and respect of the members. I have attended meetings of this and other societies where the members went away feeling they had been buncued into wasting time and money listening to worthless papers, and on the other hand which of us does not remember meetings whose intellectual and literary level was such that we felt it "had been good to be there."

In the years that I have practiced medicine in this State, I frankly admit that I have had a bad record of attendance at the annual meetings, which will cause some to say that I am not

*Read before the Seventy-second Annual Meeting of the Medical Society of the State of North Carolina, Pinehurst, April 28 and 29.

qualified to act as a critic. The reasons are clear enough. First, I have been a very busy man and have found it very hard to get away from my work. Secondly, because the time of our meetings is usually such as to conflict with certain National societies, dealing with the branch of medicine in which I am especially concerned. Thirdly, (let me be frank and outspoken and most of you will admit, I believe, that I am correct) because of the undue amount of medical politics which choke the real purposes of our society. But more than all else because of the keen disappointment I have felt in the meetings I have attended, where the chairmen have too often let the program build itself, and where I have felt like the man who goes to church hoping to get from his clergyman the message that his hungry soul needs and has come away unsatisfied.

In the collection and able presentation, for the benefit of the members, of a number of clearly and well written timely papers, in which are discussed clearly and succinctly some of the innumerable problems of internal medicine which shall call forth thought and give rise to able and wise discussion and quicken the minds of all the doctors who hear them, or who read them in the transactions, lies the only justification of such a section and society as this, and if our chairmen are sometimes careless, or our members too often too lazy to put their medical thinking and medical experiences in good clear English, or other members are too timid to rise and discuss such papers as offer food for thought, (and we should have no others) then it is no wonder if the profession of the State is not tempted in large numbers to take time and trouble and expense to come and listen to ill written, poorly expressed, badly digested papers, which cannot encourage thought, and do not open themselves to worth while discussion.

Indeed, if, as I and many believe, there has been too much politics in this society, may it not be explained on the ground that the medical program has too often not been such as could arouse

our interest, and that the members therefore have turned their attention to wire pulling for their friends. I have carefully read the annual transactions and, while there are always a number of valuable articles, I do not hesitate to say, unpopular though it may be, that the transactions of this society and this section have not always been such as should come from the profession of this great and growing State or such as can creditably represent us in that great forum of medical thought, where we cannot afford to be behind our brothers of other States, where all that is best and most recent in medicine is brought to the attention of the great body of the profession and where our colleagues throughout these United States will judge us by our fruits. Yet in North Carolina we have a very large percentage of physicians who are an honor to our profession as clinicians and one or two I am proud to say who are doing worth while work in research, and if such men help the chairman (for the responsibility is not all his) to make the section of internal medicine what it could be and should be, they could give us a program that would do honor to our society and to the medical profession of the state, and which would do its share in the study, and possibly the solution, of some of the many difficult problems with which a physician is called upon to wrestle.

If then, as I have said, we have in North Carolina plenty of men competent to do clear medical thinking and who can put that thinking into lucid compelling English, if we have other men who, hearing such papers are willing to get on their feet and, avoiding, save in rare instances, the empty compliments we too generally indulge in, discuss clearly and cogently the ideas that have been presented to them, enriching them by the fruits of their own experience, and if we have innumerable other men, who while they may not have the gift of writing or of talking on their feet, can be stimulated and helped by such papers and discussions, why are our programs too often dull, stale, and unprofitable, our discussions uninteresting and un-

enlightening and the resulting transactions in no sense any addition to that great mass of medical thought out of which is being slowly, but surely built the medicine of the future? First, as I see it, we doctors are, as I have confessed to myself, lazy, swallowed up in our own practice and yet not interested enough in it to bring to the great medical market the products of our experience for exchange so that, when we are approached by the chairman of this section, we with one accord proceed to make excuse.

Then, as to our chairmen (and I need not say that this has no reference to the chairman of to-day's meeting, who, as I chance to know has worked hard to give you an excellent program which should justify your journey here): How much time and thought does the usual chairman of this or most medical societies give to the careful, thoughtful building up of a real worth while program? Look at our county societies, or at many even of the large interstate societies. The chairman too often waits until the last possible minute, then writes in a hurry to a carelessly chosen list of men, asking them for papers. He has no idea of what he wants the meeting of his section to stress; he is apt to accept any paper offered him with little or no consideration of its content, its form, or the English in which it is written, which, in these days of the stressing of pre-medical sciences and the consequent neglect of a broad education in the humanities and the cultural subjects, is becoming worse and worse in our medical literature. Is it any wonder with such careless building of programs that we do not interest the doctors or that an item in a program which gives no clear idea of what its author wants to write on, or giving a doctor's name with "Subject to be announced later" does not stimulate any great desire to hear what a man has to say who doesn't know what he is going to talk about? Many of the men who attend these meetings, while splendid and useful doctors, have not developed the trick of writing or discussing a paper, but if

the recent graduate will begin early to think out his cases and put that thinking into the best writing he knows how, and if he will then force himself, as a duty he owes to himself and to the profession to read papers or to get on his feet and express in a few words the thoughts his colleague's paper must stimulate; if he is a thinking man, he will by degrees develop the power of writing and of thinking on his feet, and those invaluable, intelligent silent members who can think clearly, even although they cannot talk, will find it more and more worth their while to attend our meetings until men will crowd to them with the assurance that they will get there new and stimulating ideas which they need to help them in their daily struggle with disease.

I do not doubt the ability of the doctors of North Carolina. I know that a great State like this, if its leaders but realize the truth, can have every year live worth while meetings. A poor meeting is primarily the fault, not of the president of the society, who holds an honorable but not executive position, which ought, I believe, to come to him only as the reward of good work previously done as the chairman of a live section, but it is the fault of an unwisely chosen chairman, elected possibly because he is a "good fellow" and popular with his friends, when he should be selected because he is a live keen clinician who thinks.

The section on medicine and every other section has a right to believe that the man they pick out to be their chairman will consider it not merely an honor to tickle his vanity but a duty demanding of him his best efforts. It is his duty and privilege to gather for his fellow members by hard work and clear thinking an interesting, worth while banquet of medical nourishment to feed them withal. Let the man so honored begin the day after his election to consider into what lines of medical thinking he wishes to guide his section. This being settled, let him not be afraid to more or less definitely pick out, not merely the subjects, but at times even the titles, of the papers he wishes on his

program, and to think out what men in the State are most capable of writing well on them. Let him communicate with them at once, within the first month at the latest, asking them not merely for a paper on any subject they choose, for many good men do not know what they can best write on, but often for a definite paper on a definite subject which he knows they can handle well. Many men can give an excellent paper if only a suitable subject is brought to their attention. After the men he has chosen have replied,—and from a fairly large experience I know that if you approach them in this way most of them will gladly and successfully respond,—let him tackle the time schedule of his program, figuring out for each paper so many minutes and so much for its discussion, and it is remarkable how closely he can estimate the exact time the section will need. Then there should be some time left over for the best of those papers independently offered, but all of which it is neither possible nor desirable to include. In any body of men there are always some eccentrics or antediluvians, or men with obsessions, or cranks, who are always glad to take up the section's time with the undigested and indigestible contents of their craniums, and the chairman should have the courage to protect his section from such authors.

Read over the transactions of past years and see how many impossible papers have, through the mistaken and weak kindness of departed chairmen, been allowed to waste our time or mar our literature. But on the other hand there are unknown men who have valuable contributions to bring to the section who need to be encouraged and to be given the opportunity to get the ear of the profession, and the chairman has a great chance to bring out such unknown talent. Such a program should be built, and all but finished, two or three months after the meeting, but the chairman's task is not finished by any means, if he wants to be a success and to be remembered as a builder of a stimulating and worth while section.

Men who promise do not always fulfill if they are left to themselves, and he must keep in monthly touch by correspondence with his authors, watching lest they procrastinate and fail him at the last minte. His enthusiasm must stimulate them and plant in them the ambition to make their individual paper one of the events of the meeting. He must also urge them to choose most carefully their respondents from men who are likely to have something worth while to say on the subject. When the time of the meeting comes, let him have it clearly understood that the time rules of the floor are to be strictly enforced to the minute, for nothing kills a meeting so successfully as a long winded speaker who doesn't know how to stop and is unconsciously stealing time from all his successors. The weak chairman who doesn't know how to call down the violator of the essential time table of any medical meeting is, as we all know the assassin of the success of the meeting he is supposed to lead. The firm use of the gavel and the refusal to allow a motion from the floor to break the rule of the society in this matter will do more than any thing else, except the content of the papers, to give a lively snappy meeting and make the audience go away stimulated and satisfied. In my judgment, tender hearted, weak chairmen are fully as responsible for making unsuccessful meetings as are poor papers.

From such a well organized and firmly run meeting will go out all over the State from the men who attend it a urge towards better medicine that can scarcely be overestimated in its beneficial influence, and men will come to expect a real mental feast and no longer care to pull wires and play politics. The State Medical Society and the Section on Internal Medicine should be a far more powerful influence for good on the medical life of our doctors than it has been, and we have plenty of potential chairmen, who, if they will take the trouble and work along the lines I have suggested, which I have tested out on different occasions, and which, I there-

fore know will work, can give us annual meetings such as will make us proud to belong to this society. Let us, as I have said, pick our chairmen carefully on the strictly business principle that he can deliver the goods and then let us hold him to a high standard of performance. From such men and not from chronic politicians should we pick the presidents of our society, and if some men, as seems to be the case, have the presidential bee in their bonnets, let them win that honor in the only legitimate way, by showing by a past successful chairmanship, or by outstanding medical work in the State, in private practice or public health work, the ability and fitness to stand at the head of our N. C. profession.

Some excellent and able men enjoy playing politics just as others enjoy horseracing or a game of poker; but I am sure I am right when I say that the great majority of the men who come here care not at all for the political game and are wearied when they see some of their good friends injuring the society and wasting so much time on it. Most men come here for a rest from their arduous labors with the sick and the suffering, and to freshen their minds with the latest medical thought, and are not interested at all whether Jones, Brown or Robinson shall achieve the honor of the presidency. If in our State we have any research workers,—and I think with pride, of at least two, and possible more, who are doing good work in this line,—here is the amphitheatre where they should be able to fight for and defend the truth as they

see it, and may I say that it would well become this society to cultivate more research work in the State and in the South where it is still far too rare?

If we have wide awake, keen minded physicians,—and we have many,—the floor of the section of this society should be the place where they should bring their experience to test it on the judgment of their fellow doctors and to clarify their thinking by conflict and friction with other minds.

If we have (and who will deny it) large number of painstaking family practitioners who do not generally tend to writing, but who at innumerable bedside in this State are doing splendid and too generally unrecognized work in the endless fight against disease and misery and death among our people, here is where they should come, sure that they will get the latest ideas in medicine to aid them in that noble struggle.

Following along the lines that I have suggested, putting aside politics to which too much attention has been given and which has held us back, encouraging the growth of our society as a collector and disseminator of medical truth, we will soon build up our association till its meetings and its transactions will excite the interest and respect of medical men, not merely within but without our State, and will reflect honor on the society which produces them and on the great State whose medical profession we wish to see standing in the forefront of the army of medical progress.

SAFEGUARDS TO CATARACT EXTRACTION*

Chairman's Address, Section Eye, Ear, Nose and Throat

Henry L. Sloan, A.B., M.D., Charlotte

The extraction of senile cataract is by and large the most important operation that the ophthalmic surgeon is called

ed upon to do. It is fraught with many difficulties and many chances of disaster. In fact intraocular surgery as a whole constitutes one of the most delicate branches of surgery. It is a responsibility not to be taken lightly, or

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attempted except by one experienced in ophthalmic surgery. Even the slightest disregard in the preoperative care, technique of operation, or in the after treatment, may prove fatal to recovery of useful vision. While the outcome in the average case shows fair results, yet it is not putting it too strongly to say that, with proper care, almost every uncomplicated cataract should be treated surgically with the restoration of useful vision.

It is with the hope of stimulating a deeper interest in this important subject that I have decided to address a few remarks, in the light of present day knowledge and experience, on this important aspect of our specialty.

In a broad, general way a definite plan of procedure should be followed from the time the cataract patient consults us. And let me pause here to say that it is unwise to tell the patients with slight lenticular opacities that they have cataracts. Many such never go on to maturity, and a smaller number may never progress to the point of interfering with useful vision. Do not use the word "cataract" for such changes. Tell them, if you wish, that there are slight lenticular opacities and let it go at that. Thereby you tell the truth and save your patient much needless worry.

When the time has come for surgical intervention, then tell your patient the trouble and assure him that he should recover useful vision. Be cheerful about it, so that he may approach with confidence what for him is a great ordeal. Cheerfulness and tactful care is very useful in the management of these old people who are subject to frequent mental disturbances and often to a frenzied psychosis. Such a contingency must never be lost sight of, for many eyes are destroyed by carelessness on the part of the attending oculist in this regard. Moreover, the patient should spend the day and the night before operation in the hospital, so that he may familiarize himself with the strange environment of the hospital. Some responsible member of the family should go to the hospital with the patient and

remain with him as much as possible. In my hands, a familiar voice has done more to prevent and to control these cases of post-operative mania than all the sedatives and hypnotics available. Post-operative delirium following cataract extraction is no myth. It has been reported as a complication in as high as two per cent of cases.

The condition of the patient's health should be known. A careful, systematic examination should be made, and any ailment should be corrected when possible. This certainly helps us in many ways, too obvious to enumerate. Diabetic patients have their cataracts removed with greater hope of success since the discovery of insulin. Operation in the presence of untreated syphilis is to invite an unsuccessful result, if not a disastrous one.

When to Operate: Age is no contra-indication to the extraction of cataract. The general health of the patient is the important factor. I have myself operated on two men ninety years of age with the recovery of useful vision. Convalescence in both cases was uneventful. In sclerosing lenses when the vision has failed to 20/200 (6/60) or what is considered no longer useful vision, the cataract should be removed. What shall we advise in case of a mature cataract in one eye and good vision in the other? We are advised on the best of authority to operate. Certainly operation is to be done at once when there are beginning signs of hypermaturity, such as thickening of the lens capsule and other changes indicating this condition. The slitlamp is of great help in this connection. Hypermature lenses are extracted with greater difficulty, and their extraction is attended with many complications. It is true that such a patient will not be able to wear his phakic and aphakic lenses, and he may have for a while an annoying diplopia. However, the latter soon passes away, and the increase in the visual field and the consciousness of a good eye in reserve more than compensate for the disadvantages. We have no less authority for such advice than that of J. Herbert Parsons and

Meller.

Shall we do a preliminary iridectomy? As a routine procedure, I believe that it is the majority opinion among present day ophthalmologists that it is unnecessary. In my own practice I do a preliminary iridectomy in some complicated cases (not in all), and in extremely nervous patients. I recall particularly a woman patient who was frightened almost out of her wits, on whom I did a preliminary iridectomy. She was so frightened she could not be still on the table. When she came later for extraction she was as much composed as any patient. In my hands, as a method of hastening maturity, the preliminary iridectomy has been of little avail.

Bacterology of the Eye: The average clean looking eye will stand operation without infection. However, a microscopic examination of the conjunctival smear should be made in every case. It is decidedly safer to make a culture from the conjunctiva as a routine. The presence of the xerosis bacillus and the staphylococcus in the culture need not be a bar to operation. If more virulent organisms are found, the conjunctival cul-de-sac must be freed of them before surgery is undertaken. The lacrimal sac must be carefully examined. If chronic infection is present it must be extirpated and the conjunctival membranes cleared up before any intraocular surgery is undertaken. Operation on one eye should not be done if there is an acute infection in the other eye.

I believe also that a badly diseased mouth should be treated as a preoperative measure. Thereby many post-operative endogenous infections are eliminated. Empyema of the nasal accessory sinuses should be cleared up in the same way.

As a special precaution, be on your guard against the so-called cases of "quiet uveitis."

Good anesthesia is a *sine-qua-non* of successful cataract extraction. In addition to the use of four per cent cocaine by drops on conjunctiva, I feel that two

per cent procain should be injected either subconjunctivally or deeply in the orbit. There are responsible advocates of both methods. Here I wish to call attention to the Van Lint-Rochat method of paralyzing the orbicularis palpebrarum. It consists of injecting about four c.c. of a one per cent or two per cent solution of procain, one-half above and one-half below, deeply along the orbital margins. In about ten to twelve minutes the orbicularis becomes powerless, and in my hands it has been the greatest boon and has relieved me of all fear of "squeezing" during operation. This procedure is seldom accompanied by any drawback; and I feel sure that any oculist who learns the use of it will never give it up. It constitutes, to my mind, by far the greatest addition in recent years to the technique of cataract extraction.

We should always strive for a good conjunctival flap. This assures rapid closure and healing of the wound, and insures to a large degree against infection. Withal a good assistant, who knows to keep quiet and to do his part well, is a great safeguard in this work. Quiet in the operating room is almost essential. Nobody but the operator should speak to the patient.

Many good ophthalmologists advocate the closure of the wound with an suture. There are a few who use it routinely. Derby, of Boston, uses it in selected cases. He prefers the mattress suture as advised by Verhoff. This subject has been fully discussed in recent American ophthalmic literature, notably by Conrad Berens, of New York, Harvey J. Howard, of Rockefeller School in Peking, China, Ellett, of Memphis, and others. Most of us would agree that it is almost necessary in certain complicated cases. The advocates of the suture in this connection are gaining ground; the trend is toward a more general use of the suture.

Both eyes should be closed and protected by a shield. Unoperated eye may be uncovered on second day. Patient should be gotten out of bed as soon as possible in order to protect him against

the danger of hypostatic pneumonia. The same is true in asthma patients, et cetera. Whenever possible, a graduate nurse, specially trained in this work, should be in attendance at all times.

I have not attempted to cover this important subject in a detailed way. Rather I have tried in a broad way to indicate some of the safeguards in this field. The ophthalmologist probably gets more satisfaction out of successful cataract surgery than any other part of

his work. Surely the *tactus eruditus* is called for in all intraocular surgery; but more especially in the extraction of cataracts. Any one who has had the privilege of working with the masters in this field can easily appreciate and hail with delight the wonderful skill of their work. We should strive for a perfect result in every case; we will more nearly approach this ideal just so soon as we make intelligent use of the modern aids to cataract extraction.

RELIEF OF INCREASED INTRACRANIAL PRESSURE BY DEHYDRATION WITH MAGNESIUM SULPHATE*

Carlyle Morris, M.D., Maxton

Injury to the head and fracture of the skull are conditions frequently met with in general practice, probably becoming more frequent yearly with the increasing number of automobile accidents.

The treatment of this condition is correctly classed as belonging to that branch of medicine dealing with surgery; certainly heretofore it was considered entirely surgical, as the patient was submitted to the operation for relief of pressure by mechanical means, namely the operation for subtemporal decompression. However, with the development of the method of relief of intracranial pressure by dehydration with magnesium sulphate solution, the treatment of fracture of the skull has assumed a somewhat less highly specialized aspect, and gives some hope to the general practitioner away from hospital facilities of reducing the mortality in cases of this condition. Therefore any method of treatment of increased intracranial pressure in fracture of the skull, especially as tending toward a more simple method and one which gives promise of becoming just as effective, or probably even more so, in the end results, than the method now employed,

should be of interest to any group of physicians practicing as a rule away from hospitals.

A few facts with regard to fracture of the skull might be mentioned: Of puncture-fractures (usually gunshot), forty-five per cent are fatal. Treatment in this class of fracture should be along general lines; that is, for the relief of increased intracranial pressure; *no attempt to probe for or remove bullet to be made* unless there are definite symptoms of local irritation.

All depressed fractures are operated upon immediately, but it would seem well to give one or more doses of magnesium sulphate solution, as later described, to relieve the intracranial pressure as much as possible before the operation.

In a majority of cases of fracture of the vault of the skull there is also a fracture of the base of the skull. About one-third of these cases die within forty-eight hours from the complication of increased intracranial pressure.

It is necessary to only briefly review the symptoms of fracture of the skull and increased intracranial pressure, as they are well known to all. One point only need be emphasized, that of history of an accident. Any injury to the head caused by force, whether applied direct-

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ly or indirectly, should be considered as a possible fracture of the skull, and particularly of the base of the skull. It does not seem radical to say that no matter how trivial the injury may be, or unimportant the history, any case having a history of blow upon the head, jaw, or face, whether there be any evidence of the injury or not, should be considered as a possible fracture of the skull and so treated for at least twenty-four hours. This cannot be over emphasized, as it requires the observation of only a few cases to impress the one importance of a routine treatment of such cases no matter what degree of injury has occurred. The patient may walk into the office or hospital receiving ward, apparently perfectly normal in every way except for a history of having received an injury to the head, and be dead in twenty-four hours from fracture of the skull as a result of the injury. This is explained by the fact of the rapid development of increased intracranial pressure, when steps are not taken to prevent this condition, and that many fractures of the skull, as those of the base of the skull, do not take place at the point of contact of the force but are the result of transmitted or radiating force.

First under the symptoms is the history of the case as mentioned above.

Second is hemorrhage. This may be from the nose, ears, mouth (in which case the blood is sometimes swallowed and vomited at a later time), or behind the ears in the subcutaneous tissues and running down among the muscles of the neck.

Third: discharge of cerebrospinal fluid from the nose, ear or mouth which may be blood-stained at first and quickly become clear.

Fourth: a group of symptoms depending upon the site of injury among which are dilated, fixed or unequal pupils, paralysis of different muscles supplied by nerves from the base of the skull, projectile vomiting, unconsciousness which may be present from the moment of the injury or which may be only a late symptom as mentioned

above, choked discs, deafness, half stupor, dizziness and a feeling of dullness.

Physical signs are demonstration of the fracture by the x-ray, evident fracture as in depressed fracture of the vault,—however there may be no evidence of fracture upon examination,—slow pulse, high temperature, slowed respiration and raised blood pressure. These last three are the signs of increased intracranial pressure which, if not relieved, causes death. As intracranial pressure is increased to some degree in practically all fractures of the skull, the symptoms of this condition may be further considered in stages as follows:

First stage; that of compensation or adjustment to the minor degree of increased pressure, the chief symptoms being headache and mental dullness.

Second stage; venous stasis, severe headache with drowsiness or restlessness, congestion of the vessels on the scalp and eyelids, fundus oculi shows swelling and enlarged veins, the pulse is slow and the blood pressure rises.

Third stage; cerebral anemia and edema, unconsciousness absolute, respiration slow, labored and stertorous, Cheyne-Stokes breaching in bad cases, cheeks puffed out, soft palate paralyzed, pulse full and slow, blood pressure high, temperature generally raised, pupils dilated, unequal, and fixed, choked discs, motor paralysis generally on one side, reflexes being increased on the side paralyzed, bladder and anal sphincters paralyzed.

Fourth state; medullary paralysis, respiratory failure, pulse becoming rapid and weak, pupils widely dilated and fixed, blood pressure falls and death occurs.

The treatment now commonly employed for the relief of intracranial pressure as mentioned above is the operative, subtemporal decompression, little being done to prevent such development of the condition. The mortality is high on account of the additional shock of the operation superimposed upon that of the fracture. The after results are frequently cerebral hernia with weakening of the muscles of the

body corresponding to the area of the brain involved, or complete paralysis, secondary plastic operations, or death from subsequent meningitis. Other measures are venesection, which is dangerous as causing a lowering of blood pressure and weakening the compensatory mechanism which prevents the medulla from becoming anemic, and lumbar puncture, also dangerous, as the cerebellum and medulla may be crowded down into the foramen magnum and sudden death result.

The following treatment for the relief of increased intracranial pressure in head injury by dehydration with magnesium sulphate solution is that used in the Post-Graduate Hospitals of the University of Pennsylvania and described in original articles by Dr. Fay of Philadelphia.

First, and of the utmost importance, this method cannot be employed when there is profound shock accompanying the condition of increased intracranial pressure resulting from loss of blood or shock from the injury, a condition of low blood pressure being already present, any process of dehydration as lowering the blood pressure to a still greater degree would only make the condition more grave. The condition of shock is quickly recognized by subnormal temperature with greatly increased respiratory rate and increased pulse rate. The opposite is true of increased intracranial pressure, not accompanied by the above condition, the respiratory rate being greatly lowered, the temperature elevated, the pulse rate being slow and becoming rapid only in the late stage. It is in this condition of increased intracranial pressure, not accompanied by shock, that dehydration with magnesium sulphate is valuable.

The patient is put to bed, when there is any history of injury to the head and symptoms which might as a possibility be those of a fracture of the skull. An x-ray of the head is made if possible. The foot of the bed is elevated twelve inches, ice cap placed to the head, and if the patient is at all restless morphine sulphate is given. If there is an accom-

panying condition of shock the treatment for this condition is immediately begun, external heat, stimulation, intravenous salt solution, blood transfusion and other well known measures. The blood pressure, pulse, temperature, respiratory rate, and pulse pressure are taken every four hours and charted. A lumbar puncture is done for diagnostic purposes, two cubic centimeters of fluid being withdrawn and the spinal pressure taken with a spinal fluid manometer. If a pressure greater than twenty millimeters is shown, sufficient fluid is withdrawn to reduce the pressure one half. When a manometer cannot be secured the spinal fluid may be noted roughly by the rate of flow of the fluid, but removal of more than two or three cubic centimeters is dangerous in the absence of any method of determining the pressure accurately. Any wound of the head is sterilized as far as possible and wet dressing applied. An initial dose of one and one-half ounces of crystals of magnesium sulphate dissolved in eight ounces of water is given by mouth and repeated every four hours until the respiratory and pulse rate return to normal. If it is found impossible to administer the solution by mouth on account of vomiting, stupor, or coma, three ounces of the crystals of magnesium sulphate dissolved in six ounces of water are given by rectum, using a soft rubber catheter or rectal tube and syringe. If the patient is restless one fluid drachm of the camphorated tincture of opium is added to the solution. Six ounces of fluid will be retained, but larger amounts will be expelled; any accumulation of fluid from the dehydration is siphoned off from time to time. As long as the respirations remain low the dose is continued, the first evidence of over dehydration being an increase of the respiratory rate above normal, more than six doses never being given whether the method of administration be by mouth or rectum.

RECTAL ANESTHESIA

V. S. Caviness, M.D., Raleigh

Rectal anesthesia has passed through several cycles of use and disuse. Each return of usage has been characterized by some alteration in technic in an effort to remove the defects in the system. During the past few years, very little use has been made of this type of anesthesia. During this time, I have been working out a new technic, differing slightly from the other methods and yielding satisfactory results.

Three main defects have characterized the various methods of administering an anesthetic by the rectum.

1. Inability to determine the rate and amount of absorption of the anesthetic.

2. The danger of too deep an anesthesia, and the inability to remove the excess of anesthetic already administered.

3. Diarrhea from irritation or paresis of parts of the intestinal tract from over-distention.

Thus it is seen that at no time during an anesthesia was the method free from serious defects, and it was even potent for evil as to sequelae.

Whenever rectal anesthesia is used there is a different situation than in anesthesia by inhalation. The rectal mucosa absorbs gases and various liquids at rates which vary with many different conditions within the rectum. Many of these circumstances cannot be determined readily. Therefore, when material is injected into the rectum, it is impossible to determine in advance the rate of absorption which may be expected.

The usual method of administration has consisted in estimating the probable volume of ether to be used for the entire anesthetic, and, after mixing with oil, injecting into the rectum at one time. It would be difficult to conceive of an easier method of administering an anesthetic. Yet ease of manipulation for the operator is not the only factor to be considered. There were so many

defects in this method that it was almost entirely discarded.

The principal of these was the danger of too deep an anesthesia. Not only was this danger very real, but after anesthesia was induced, it was difficult or impossible to remove the excess of anesthetic which had been administered. Similarly, if a person were to require a greater amount of anesthetic than the average person, there was no provision for administering the additional amount when needed.

The third defect appeared after the conclusion of the anesthetic. Diarrhea was so frequent as to be the rule rather than the exception. This diarrhea was at times prolonged. In the absence of diarrhea, one looked for paresis of portions of the intestinal tract from over distention by the volume of fluid injected or by gas.

It is not to be inferred that rectal anesthesia, no matter how administered, could be used routinely for all surgical work. This would be impossible. Rectal anesthesia has never been developed to a high degree of proficiency, and there still lurks the element of danger. Another phase of the matter lies in the type of operation to be performed. For any operation involving opening the abdomen and exposure of the intestines, the inhalation method will probably always be preferred.

The Trendelenburg position serves as another contraindication, in as much as this position favors drainage of the anesthetic from the rectum and sigmoid into the descending or transverse colon, with complete loss of control over any excess of anesthetic which may have been administered by rectum. Emergency work also is eliminated from the eligible cases for rectal anesthesia, due to the length of time required for preparation. Any surgical work to be done about the rectum, anus, perineum, external genitalia and contiguous structures would no more be indications for rectal anesthesia than the structures

about the face are for inhalation anesthesia.

There is, however, a wide variety of indications for rectal anesthesia. Surgeons, since the time when Lord Lister following discoveries and suggestions made by Pasteur, have been striving for better asepsis. The anesthetist is often considered a menace to asepsis, even though a very necessary evil. In the same connection must be considered the inconvenience and the disadvantages to which the anesthetist is often subjected. I have seen the anesthetist placed almost underneath the operating table and entirely covered up by the sterile table covers during an extensive brain operation, and finally, to add to the indignities heaped upon him, wet by hot water used to stop hemorrhage.

In many operations about the head, face, and neck, the anesthetist is in the way of the operator. This is true in sinus work, plastic work about the nose, mouth, neck, harelip, cleft palate and operations on the jaw or tongue.

The difficulty is being partially eliminated in some places by the use of intra-tracheal anesthesia. Intra-tracheal anesthesia has a field that probably can never be filled by any other method. But it is now being used in many instances where rectal anesthesia would be preferable. Plastic work about the head, mouth, face, and neck, sinus operations, as well as many other operations, admit the use of intra-tracheal anesthesia, but with the disadvantages of having the anesthetist in the way of the surgeons and the lowered degree of asepsis possible.

Other factors to be considered are the facts that a deeper anesthesia must be induced in order to pass the laryngoscope into the pharynx and the catheter into the trachea than is required for the needs of the surgeon for the operation; also, a certain amount of skill is required to use the laryngoscope and to pass the catheter into the trachea. The average anesthetist cannot pass the catheter into the trachea. Many surgeons could do this, but that necessitates a delay while

the surgeon prepares himself for the operation.

There is another type of case in which intra-tracheal anesthesia cannot be used from a purely mechanical standpoint. Any operation on a patient who has ankylosis of the jaw certainly must be performed without intra-tracheal anesthesia. This is just as true in patients with an abnormally small mouth. In both these cases, the passage of the intra-tracheal catheter is an impossibility.

Another objection to the use of intra-tracheal anesthesia is the cost of the apparatus. Only in a very large hospital will intra-tracheal anesthesia be used sufficiently often to warrant the purchase of the necessary equipment. Nor will the maintenance of an anesthetist who can operate the machine, keep the machine in working order, and pass the intra-tracheal tube, be justified.

In consequence of the necessity for anesthesia to be administered by some means other than by inhalation, rectal anesthesia has developed. Our work, in an endeavor to overcome some of the obstacles, has been tried out in a number of cases with uniformly satisfactory results. At all times we have known the depth of the anesthesia; we have never been in any danger of too deep anesthesia, and there has never been any excess of anesthetic to be removed. We have never had any diarrhea following the use of our rectal anesthesia.

Equipment:

The apparatus required is simple and easily obtained. The essential equipment required consists of a rectal tube, a funnel, a short piece of rubber tubing, and a glass connecting rod used to connect the funnel with the rectal tube. The rubber should be of such length as to permit the elevation of the funnel to a maximum working distance of about twenty-four inches above the patient. A hemostat is used to clamp the tube and prevent the escape of the fluid injected into the rectum. A glass graduate, graduated in drams, or c.c.'s, and a basin for holding hot water should be avail-



Fig. 1. Apparatus required: A rectal tube, a funnel, a glass graduate, a basin, ether, olive oil and paregoric constitute the necessary equipment. I have on hand ready for immediate use a complete set of sterile hypodermics.

able. Ether, olive oil and paregoric complete the equipment.

Method of Administration:

1. Preparation: The patient undergoes the routine preparation for operation as desired by the individual surgeon; in addition to this, two nights before operation, the patient is given an ounce of castor oil. The following morning a colonic irrigation is given. During this day the patient is given a liquid diet. Other colonic irrigations are given, one in the night before the operation, and the other on the morning of the operation. This procedure empties the entire intestinal system. There should be no further disturbance of the intestinal tract prior to the anesthetic. The need for such an extensive preparation may readily be seen when one considers the difficulty in making any fluid remain in the rectum. There is a constant tendency to expel anything in the lower bowel.

Administration:

Two hours before operation, the anesthetic is begun in the patient's bed (Figure 2). Three quarters of an hour prior to beginning the anesthetic, the patient should be given a hypodermic injection of morphine and atropine,—the dose depending on the age, sex and weight of the patient. At the time for beginning the anesthetic, a small rectal

tube is inserted for a distance of about three and one-half inches, and is secured in place by means of adhesive. The funnel is attached to a piece of rubber tubing connecting it with the rectal tube, giving a working distance of about twenty-four to thirty inches from the funnel to the rectum. The patient is placed on the left side with the hips slightly elevated. This favors absorption but prevents the mixture from passing through the transverse colon.



Fig. 2. Administration: The anesthetic is begun in the patient's bed. There need be no more disturbance than for giving rectal feeding.

The patient is now ready for anesthesia. There should have been no cause for excitement, and there should be none of the usual dread of taking an anesthetic. The patient should have been prepared for this anesthesia by some reassurance regarding the low element of danger and absence of discomfort. All needed equipment should be in readiness and all confusion avoided.

The amount of ether injected must depend upon the weight of the patient. The first ether injected consists of a mixture of one part ether and three parts of olive oil; this is a standard percentage for induction. The percentage

of ether is increased as anesthesia progresses until we have a one to one ratio between the ether and olive oil. This proportion is secured at about the time of complete anesthesia. (All ether-oil mixtures must be warmed to body temperature before being administered. If the temperature is not that of the body, the injection will be expelled. To the first ether administered should be added two drams of paregoric to allay any irritation which might be produced by the ether on the rectal mucosa.

The initial injection should contain one dram of ether for each twenty pounds of body weight. One half hour later, we again administer one to two drams of ether for each twenty pounds of body weight in a mixture of one part ether and three parts of olive oil; the same amount of ether is given one-half hour later in a one to two mixture, and one half hour later this is again repeated. The amount of ether required will depend on the individual susceptibility of the patient to ether. One half hour later, two hours after the beginning of anesthesia, the patient should have a *complete surgical anesthesia*. The amount of ether is now sharply reduced; it is administered in a one to one ratio with olive oil, one dram for each forty pounds of body weight, and repeated so often as needed. Usually this is every forty-five minutes.

At the beginning of anesthesia, the patient will show transitory excitement, as manifested by a slight increase in the pulse rate. As a check against this the pulse and respiration should be recorded fifteen minutes before the injection of the hypodermic of morphine, and every fifteen minutes thereafter until the patient reacts from the anesthetic.

The patient becomes drowsy about one-half hour following the beginning of the administration of the anesthetic; during the next half hour the drowsiness increases and the pulse rate rises. One half hour later the pulse rate is still up, and the patient is unable to talk coherently. During the next few minutes, as the anesthesia becomes complete, the pulse rate drops back to the normal

as indicated by the rate prior to the administration of the morphine; this is a base line from which is determined the need for more anesthetic. It should be continued throughout the operation.

If the patient is about to waken during the anesthetic, it will be shown by a drop in the respiratory rate and a rise in the pulse rate; this is an indication for the administration of more ether. If the anesthesia is too deep, there will be a rise in the respiratory rate and a drop in the pulse rate. This must be watched carefully as it is a very sensitive indicator.

A variation of ten points in the pulse or four points in the respiratory rate is not alarming, but if not due to the surgery it indicates too much or too little anesthetic. If too much, no more anesthetic is given until the pulse and respiratory rates shown evidence that the patient is about to waken. If the anesthesia becomes too light, more anesthetic is administered. By watching for variations in the pulse and respiratory rates a very smooth and even anesthesia can be given. Variations of not more than five points above or below the normal pulse rate can be had throughout the entire operation.

The pulse is best taken in the dorsalis-pedis artery; this is usually available and will not interfere with the surgeon in any of his work.

Following the completion of the operation, the rectum, sigmoid and colon should be washed out thoroughly with warm soap suds, and an ounce of olive oil left in the rectum. A larger volume of olive oil produces seepage.

In this type of anesthesia, it is just as possible to avoid the stage of excitement as in giving an anesthetic by inhalation. This is effected in much the same manner as in inhalation anesthesia by giving a very slight, gradual induction of anesthesia and then pushing the anesthetic at the time of the stage of excitement. The patients show very little tendency to violent exertion during rectal anesthesia.

One of the many advantages of using rectal anesthesia should lie in its use in

patients who have pulmonary tuberculosis. Chloroform, nitrous oxide, and other similar anesthetics are frequently contraindicated on account of conditions which are associated with the tuberculous infection. The ether in rectal anesthesia is eliminated from the body primarily through the lungs, but we do not have that excess of the gas present in the lungs that we have when giving the anesthesia by inhalation.

Inasmuch as the ether is eliminated from the body by the lungs, it is important at all times that the respiratory center function properly. In case of any tendency toward respiratory deficiency some respiratory stimulant should be given. Caffein and sodium benzoate, which is the drug of choice, should be given hypodermically. Strychnine, as well as any of the other respiratory stimulants, may be used.

In our series of cases, there have been no nausea and no vomiting following anesthesia. We account for this from the fact that here is no ether-laden mucus swallowed. The result is an absence of the usual irritation in the stomach from ether.

Diarrhea has been conspicuous by its

absence. No patient of our series has shown any tendency to diarrhea.

CONCLUSION

The type of anesthetic administration here described has the following advantages:

1. At all times the rate and amount of absorption of anesthetic is known.
2. At no time should anesthesia become too deep, nor should there be any excess of anesthetic to be removed from the rectum.
3. There should be no danger of diarrhea or paresis of the intestinal tract following the anesthesia.
4. It is administered in the patient's room with no display of paraphernalia, and with a minimum of excitement.
5. The anesthetist is completely out of the way of the surgeon in any operation about the head, face, or neck.
6. In plastic work about the head and neck better asepsis is possible.
7. In pulmonary diseases the irritation of the bronchial mucosa by ether is reduced to a minimum.
8. Inasmuch as the patient swallows no ether-saturated mucus, the anesthetic is not followed by nausea or vomiting.

SOME POINTS IN THE DIFFERENTIAL DIAGNOSIS OF ABDOMINAL CONDITIONS*

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At a recent medical meeting in Milwaukee I attended some sixteen diagnostic clinics or lectures that had to do with abdominal lesions, and the thing that seemed to me to be dominant in the lectures was that abdominal conditions can be largely diagnosed by means of full histories, careful physical examinations and logical deductions therefrom. At a time in the surgical era when exploratory laparotomy is so safe for the patient and so easy for the surgeon, it seems that there is a real temptation to

advise exploration before adequate investigation has been carried out. Dr. John H. Gibbon refers in this connection to the old doctor who, when he did not know what was the matter with his patient threw him into a fit, knowing he could cure him then as he was "hell on fits," and says the doctor is in danger of becoming "hell on operations." There is also an added danger in this age that we will get to depend so much on laboratory and x-ray aids that we will neglect to cultivate and use our senses. This was well brought out by Dr. Henry A. Christian in his recent clinic held in the Presbyterian Hospital, when he said that

*Read before the Seventy-second Annual Meeting of the Medical Society of the State of North Carolina, Pinehurst, April 28 and 29.

the blood examination was the least important aid in the diagnosis of pernicious anemia.

In recording the history of abdominal complaints, the chief complaint should be in the patient's own words as he usually states quite definitely the thing from which he desires relief. I have seen patients operated upon successfully, so far as finding and removing real pathology, and still not relieved of their complaints, because they were forgotten on finding some other trouble. It is well to remember that patients may be afflicted with more than one diseased condition giving rise to their symptoms. Often patients themselves do not know their own history, and it is necessary to go over it with them more than once. Sometimes in the excitement of being examined, or on account of the dread of an operation, I find patients will leave out important parts in the history which they recall when lying quietly in bed after an operation. It used to be a source of considerable embarrassment to me as an interne to get what I considered a complete history from my patient, only to have him tell the chief a different story the next day, or add something of importance. This was well exemplified in the man with a large mass in the upper right abdomen, who told Dr. Christian about his hematuria only after he had asked about it, and had failed to tell his family physician and his hospital physician because they had failed to ask about that particular symptom.

Pain is probably the most frequent and most important symptom in the abdomen, and, in obtaining the history of pain, it is very helpful to get a complete description from the patient of the character, the exact location, the intensity and what was necessary for its relief. In trying to locate the source of the pain, it is necessary to remember that it may not originate in the abdomen but may be referred: as witness the frequency of pain in the abdomen associated with pleurisy, angina, tabes, herpes zoster, spondylitis and,—especially in children,—coxitis. When the pain orig-

inates from some diseased condition within the abdomen, it may be associated, according to Dr. Wm. Goldie of Toronto, with one of four conditions; muscle spasm, peritonitis, infiltration of tissue and distended hollow organs. You will readily see that the character of pain will point toward and away from certain of these conditions. For example, pain associated with muscle spasm is an interrupted, rather than a continuous pain. This was beautifully illustrated in a young man presented by Dr. Goldie, who gave a typical ulcer history of many months duration, but in which the pain for the past six days had been constant and radiated through to his back. The periodic pain was due to muscle spasm, but this constant pain was due to infiltration of tissues as result of slow perforation on the posterior wall. This diagnosis was confirmed by the x-ray.

When confronted with an abdominal tumor, Dr. Francis H. Lahey, of Boston, says that we should think of four pathological conditions which may give rise thereto, namely; inflammation, new growth, congenital defect and trauma. Having placed these in your mind, take up one by one the organs that are, or may be, found in that particular part of the abdomen and make the diagnosis by exclusion. For example: swelling in the upper left abdomen might be kidney, spleen, colon, tail of the pancreas, or retro-peritoneal glands. Is this tumor an inflamed kidney, a new growth in the kidney, as hypernephroma, or a congenital cystic kidney? What findings in the case in favor of or against this diagnosis? What symptoms should be presented to make such a diagnosis, which are not present in this case? The most important thing in diagnosing any given condition is first of all to bring up that condition for consideration.

So much for generalization of abdominal pain and abdominal tumors. I now desire to take up some isolated points in the diagnosis of the diseases of certain abdominal organs.

In peptic ulcer the pain is periodic, has always the same intensity, has a

definite time relation as to meals and is relieved by food. If, however, there is a slow perforation with infiltration of the tissue, the pain becomes constant, as in the case of the young man referred to above. Ulcer symptoms may be mimicked very closely by referred symptoms due to spasm from chronic appendicitis or gall bladder infection. It is helpful to remember that reflex symptoms rarely show the same periodicity or the same intensity as occurs in ulcer cases. A very valuable point in this differentiation mentioned by Dr. Goldie is that in referred symptoms the history is different in the early stage from that in the later stages. Question the patient carefully as to the onset of his symptoms, and you will find that in ulcer cases the history is the same in the first month as it is at the present time; whereas, if the symptoms are referred, you will find the condition began as a mild dyspepsia, with slight discomfort after meals, or some belching of gas and that only later did the present symptoms develop. As regards the differential diagnosis of ulcer and cancer, Dr. Crile says that the history is very suggestive. The history in cancer cases usually dates back less than a year, whereas in ulcer cases it extends over a much longer period as a rule. The number of ulcer cases developing on cancer is probably much smaller than was held by some authorities a few years back. If the patient improves on medical treatment, it is in all probability not cancer. Jejunal ulcer occurs in about two per cent of all gastro-enterostomies, usually comes on within one to three months after operation, and is to be thought of where the symptoms are not relieved or where they recur following operation. An almost diagnostic sign, as noted at the Mayo Clinic, is that in describing the location of this pain, the patient takes his two index fingers and places them a little above and to each side of the umbilicus and runs them down several inches on either side of the midline. The pain is a little lower than his original pain and radiates down the midline.

As regards the diagnosis of gall bladder infections, let me call your attention to the presence of bile pigments in the urine, which indicates functional deficiency of the liver. A still more delicate test is the presence of bile pigment in the blood serum as tested by means of Fouchet's reagent. This test may be positive when the urine is negative and yet is not delicate enough to detect bile pigment unless it is present in pathological amount. In doubtful cases the presence or absence of bile pigment in the urine or in the blood is an added link in the diagnostic chain of evidence. Eighty-five per cent of gall bladder cases can be diagnosed without the aid of tetrabromophenolphthalein, but it is indicated in the remaining fifteen per cent of cases. Dr. V. S. Counselor, of the Mayo Clinic says in private that he hopes soon to be able to announce to the profession a salt which is non-toxic and which will visualize the gall bladder. Pain in the back is not due to gall bladder infection, but is due to the associated pancreatitis, according to Dr. C. H. Mayo. In the diagnosis of acute pancreatitis Moynihan calls attention to the value of Lowe's test and in three out of four cases reported by Waring and Griffiths, this test was positive. It consists in putting a few drops of adrenalin chloride in one eye, repeated after a few minutes and waiting from fifteen to thirty minutes. In cases of acute pancreatitis the pupil will dilate from the adrenalin. In a normal case there will be no change in the pupil.

As regards the differential diagnosis of inflammation above and below the diaphragm, a deep breath greatly increases the pain and pressure relieves the pain where the inflammation is above the diaphragm. The leucocyte count is much higher in inflammations

Dr. Walter L. Niles, of New York, called attention to congenital peritoneal bands as the cause of abdominal pain. This condition is often overlooked, but may be diagnosed more frequently if it is thought of. The symptoms produced are either reflex or toxic in na-

ture. The pain is seldom severe, is relieved by vomiting and by enema, is often accompanied by headache, which comes on one to two hours after meals when the stomach is full and the x-ray shows a fish hook type of stomach. These bands are congenital in origin, occurring during the rotation of the bowels, and the majority never give rise to any symptoms. They should not be confused with acquired adhesions resulting from inflammation.

Sir Henry Gray, of Montreal, makes two tests which he considers a great aid in the diagnosis of chronic appendicitis. The first test is the presence of deep hyperesthesia over a chronically inflamed appendix, and is elicited by making firm pressure with a pin held with the point towards the patient's head beginning just below the costal margin and drawing the pin down along the outer border of the right rectus muscle. Pain will be experienced when the pressure is almost over the appendix. You may then draw the pin in from the flank and also from the left side of the abdomen and thus outline an area of deep hyperesthesia whose center corresponds approximately to McBurney's point. The second test is made as follows: with the finger locate a tender spot over the left rectus, usually one and one-half inches below and to the left of the umbilicus, corresponding to the ending of the eleventh thoracic nerve. Estimate the amount of pressure necessary to give pain here and relax the pressure. With the back or flat palm of the hand make the same amount of pressure over McBurney's point and maintain the pressure. Again make pressure with the finger on the tender spot on the left side and find that the tenderness at his spot has disappeared. This sign indicates the presence of a Lane's kink or else a chronically inflamed submesenteric appendix. I have not been able to confirm this sign in many cases. Dr. A. L. Soresi describes a helpful sign in the diagnosis of appendicitis. The patient lies with the thigh flexed and breathes deeply while the surgeon places his hand over the upper right abdomen and

gently works it up under the right costal margin and maintains firm pressure. The patient is asked to cough, which in the presence of an inflamed appendix will give rise to pain around McBurney's point. This sign is explained by pressure on the cecum of gas in the colon and by pressure from the rectus muscle which pulls on its lower attachment when its upper part is held firmly fixed by the hand. The value of this indirect method of palpation is largely a psychic one; the patient expects pain under the palpating hand and therefore does not complain of any pain at McBurney's point unless the pain is really there.

Dr. John V. Barrow of Los Angeles, called attention to the frequency of intestinal protozoa and to the variety of symptoms which they produce. In any patient with ill defined or complex symptomatology, it is well to think of and to rule out this condition. Especially is this true in those patients in middle life who have chronic abdominal complaints and associated hypertrophic arthritis of the smaller joints, such as the finger joints. In these patients an intestinal protozoon has been found which is thought to be the causative factor. A like organism has been found in the cervixes of some women suffering with the same condition.

The presence of a serum rash, joint pains and muscle soreness within a few hours following rupture of ovarian cyst should be helpful in the differential diagnosis of an otherwise baffling acute abdominal condition. In the case I have in mind, we did not suspect the cause of these symptoms until the abdomen was opened. The symptoms of serum absorption which this patient had, namely the rash, joint pains and muscle soreness, in the presence of acute abdominal symptoms should lead one to suspect blood or serum in the abdominal cavity.

It is important to differentiate between the different causes of gas pains, especially those following operations. In some, this pain is due to hyperperistalsis, while in others the reverse condition is present. This differentiation

may be made in a few seconds with the ear or the stethoscope to the abdomen, as in the former condition there is marked gurgling of gas and liquids in the intestines, whereas in the parietic condition there are no audible signs of peristalsis. This distinction is important in the treatment as one condition requires an anti-spasmodic and the other rest or possibly stimulation. Treatment which may benefit one, may make the other worse. Thus the folly, as is done in some clinics, of giving eserine or other drugs routinely after laparotomy without regard to the disturbed physiology.

The diagnosis of acute abdominal injuries is at times a difficult one and a most important one. Dr. George E. Brewer, of New York, has recently called attention to these injuries and high mortality incident to late diagnosis. It is at times very difficult to differentiate between symptoms due to local injury to the abdominal wall and those due to an injured viscus. Dr. Brewer's criterion for operation in these cases is associated pain, tenderness and rigidity. The combination of these signs means visceral injury and call for exploration before the signs of hemorrhage or peritonitis present themselves. The mistake of going in too late is made much more frequently than going in unnecessarily. In fact, I think the general statement may be made in any acute abdominal condition caused by trauma or disease where there is considerable doubt about going in, the patient would be given the benefit of the doubt by having the exploration. Contrariwise, in chronic cases where there exists the same amount of doubt about going in, I think the patient would be given the benefit of the doubt were he not to have the operation. The more painstaking the history, the more thorough the physical examination, the more logical the deductions therefrom, the less need of the exploratory laparotomy.

SUMMARY

Granting that a very large percentage of abdominal conditions may be

diagnosed clinically, every such patient is a challenge to our ability to use our senses and to draw proper deductions rather than depend entirely, or even primarily upon outside aid. Dr. W. W. Keen very graphically presents this truth in the following lines: "With all our varied instruments of precision, useful as they are, nothing can replace the watchful eye, the tactful finger and the logical mind which correlates all these avenues of information, and so reaches an exact diagnosis."

A full and complete history is of primary importance in diagnosing abdominal complaints. This history should give the chief complaint in the patient's own words and will usually have to be added to and filled in by careful questioning of particular symptoms in their chronological order. Such a history may require more than one sitting to obtain. It is helpful to think of pain in the abdomen as being associated with one of four conditions; muscle spasm, peritonitis, infiltration of tissues, or distention of a hollow organ.

Confronted with an abdominal tumor, you should think of four pathological conditions which might give rise thereto, namely; inflammation, new growth, congenital defect and trauma.

I have referred to some diagnostic points which are either new or are apt to be overlooked and are of importance in the following conditions,—gastric, duodenal and jejunal ulcer, gall bladder infection, pancreatitis, inflammations above and below the diaphragm, peritoneal bands, chronic appendicitis, intestinal protozoa, ruptured ovarian cyst and acute abdominal injuries.

In conclusion, I would like to emphasize the necessity, as Dr. Stuart McGuire says in regard to appendicitis, of wasting no time in the diagnosis and treatment of acute abdominal conditions and of sparing no time in chronic abdominal conditions.

SIGNIFICANCE OF BLOOD IN THE PERITONEAL CAVITY*

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When one has before him well developed symptoms of ruptured ectopic pregnancy, or an abdominal symptom complex which he knows is the result of trauma, it is of no significance to open the peritoneum and find it filled with blood or blood-stained fluid; but, on the contrary, when one makes an incision into the abdomen of a patient who is supposed to have acute appendicitis, or some other disease of frequent occurrence, in the absence of injury, it is often very perplexing to find the peritoneal cavity filled with blood, or even a bloody fluid; and it is here that one's surgical judgment is often well tested. Of course, the origin of the hemorrhage will be sought, but often only the keenest scrutiny will reveal that origin and enable the surgeon to effect relief without undue trauma or prolonged operation. It is the purpose of this paper to point out some of the more common causes of intraperitoneal hemorrhage.

Some of the most common causes of a bloody peritoneal fluid are ruptured ectopic pregnancy, hemorrhage due to tumor,—which includes pedunculated fibroids with twisted pedicle, ovarian cyst, sarcoma of parovarium, hypernephroma, and metastasis to abdominal structures from other primary sources,—hemorrhages of ovarian origin due to ruptured graafian follicle and corpus luteum, those due to inflammatory conditions such as appendicitis, acute hemorrhagic or tuberculous peritonitis, and rupture of spleen due to malarial swelling and, finally, miscellaneous, such as rupture of vessels of the meso colon due to arteriosclerosis, volvulus, internal strangulated hernia and spontaneous hemorrhage into bed of kidney.

The pathology varies according to the cause of the hemorrhage and in direct

proportion, governs the symptoms therefore, no symptom complex is always indicative of hemo-peritoneum, but rather hemoperitoneum is a symptom and here our method of treatment is often governed by the severity of a symptom. Signs of fluid in the abdomen; that is, distension, dullness in flanks, shifting with position, fluid wave, etc., even in the presence of shock, rapid pulse, pallor, and lowered blood pressure do not indicate blood of any great amount in the peritoneal cavity if there is no hyper leukocytosis. Through a study of this symptom Wright and Livingstone¹ were forced to conclusions as follows:

1. Hemorrhage in peritoneal cavity always early increased the leukocyte count. In rupture ectopic gestation, the average for 102 cases was 20,200 in 24 hours.

2. The count usually reaches normal in 4 days.

3. Intraperitoneal injections of whole blood in varying amounts always increased leukocytosis of 150 to 320 per cent.

4. Similar injections not reaching the peritoneum showed no analogous increase. Of course a high leukocyte count associated with such a train of symptoms is not pathognomonic because of the influence infection may bring to bear, yet Hoessli² reports three cases with marked hyperleukocytosis and no other cause found at operation than blood in the peritoneal cavity.

A case which we recently treated thoroughly illustrates this point. A white male child, age 5 years. Past history: Negative. Present history: About 24 hours ago child was found by its mother in an adjoining room in a semiconscious condition, pulseless, pale and clammy. The family physician was summoned at once and he stated

*Read before the Eighth District Medical Society, Mount Airy, November, 1924.

that the child showed extreme shock. The child was put to bed and stimulated with strychnia, digitalis and heat and recuperated very nicely after an hour. During the night the child was restless but otherwise in fair condition. During the last few hours he has developed extreme pallor, rapid pulse, and every symptom of an abdominal crisis. The mother states that she things she heard the child fall from a chair when the first symptoms occurred and is quite sure the child has been injured, and upon further inquiry it is found that the child has had abdominal pain, loss of appetite and fever for three days, gradually getting worse. Bowels have moved without purgative in last twelve hours. Nausea and vomiting frequent for twelve hours.

Physical examination showed a very pale normally developed white child in extreme shock. Everything was normal except for the pallor, rapid thready pulse 140 per minute, and a silent distended abdomen which was very rigid, stationary and extremely tender all over. No tympany, fluid wave, nor shifting dullness was definitely elicited. Temperature was 102 F. Urine was normal. Blood count showed 16,000 whites and 50 per cent hemoglobin. Under ether the abdomen was immediately opened, with a preoperative diagnosis of acute appendicitis. A blue peritoneum bulged through the right rectus incision and about 800 c.c. of fluid blood escaped with no coagula. The cavity was sponged dry and all the solid organs as well as mesentery and omentum were examined for bleeding points and none found. Upon remembering the previous diagnosis the cecum was brought up and the appendix found to be acutely congested and swollen. There was definite frank hemorrhage from a vessel in the meso appendix. The bleeding points were ligated, the appendix removed, and the boy made an uneventful recovery. Examination of the specimen showed acute appendicitis with hemorrhagic mucosa and blood clots in the lumen. Whether the hemorrhage was traumatic or of inflammatory orig-

in I am unable to say, but the fact remains that hemorrhage was not previously diagnosed, that there was definite inflammation of the appendix, and that the blood was not clotted. This condition leads me to believe that in the presence of inflammation with fluid exudate, this exudate prevents the clotting of blood, and that on the other hand, if one finds a large amount of coagulum the inference is that the bleeding is not entirely of inflammatory origin. I wish here to report another case which bears out this conclusion.

A white female, 43, married, came in complaining of acute "pain in the abdomen." Past history: Negative. Present history: Began three days ago with almost sudden pain in abdomen, low down, she immediately became very weak and clammy, with some inclination to urinate. These symptoms became more severe until entering the hospital. M. H. Menstruation always normal. Had two children. Normal menopause two years ago and since that time has become very fat. Apart from some dysuria history is normal. Physical examination: A very large fat white woman, temperature 99.4, pulse 80, B. P. 130/80. Head, neck and chest: Normal. Abdomen: Distended, tympanitic in upper part, dull in lower. Tenderness and muscle spasm all over. No tumor masses palpable. G. U. Vagina normal. Cervix bilaterally lacerated. Uterus cannot be palpated on account of pain. An indefinite mass can be felt in the right of pelvis. Urine showed slight trace of albumin and a few pus cells. Blood count 17,500 whites.

Operation under spinal anesthesia, showed the following: A gangrenous tumor attached to the right appendage near the ovary, the size of a grape fruit, necrotic and coming away with very little resistance. The pelvis was filled with blood extending up into the abdomen. Tissues were extremely friable. Ovaries and tubes seemed to be normal except for congestion. Pedicle where tumor came away left no bleeding point and tissues were so friable that no attempt was made to ligate it. Appen-

dix was congested. The intestines were markedly distended with gas. The tumor was removed together with the appendix. The intestinal distention was relieved by anchoring a catheter in the ileum and the abdomen closed in layers.

Section of the mass showed mixed cell sarcoma and blood clots.

We have no reason to believe this to be of inflammatory origin, because there was no visible bleeding about the appendix, and because of the frequency with which this type of tumor is associated with hemorrhage it is to be expected.

Wilse³ states that he has had three such cases; that in each there was severe hemorrhage, and in each the tumor was taken for a blood clot until examined under the microscope. He further stated that none of these cases was cured—even though each was treated with massive doses of radium or x-ray. The time since operation of the above case has not been of sufficient duration to give the final outcome, but she was given postoperative x-ray therapy of the 220 K. V. type and is doing well at present.

Tumors of this type usually cause no symptoms until hemorrhage occurs because they are very malignant, are rapidly growing, pedunculated, and sloughing of the pedicle takes place as result of anemia necrosis before the tumor reaches a size noticeable to the patient. Another significant observation is that when these tumors slough the process is usually complete, the slough coming away at operation so easily that the point of attachment is not easily detected. When large clots are found in the female pelvis and no source of hemorrhage found they should always be sectioned.

It has long been a popular teaching that when an unsuspected hemorrhage is encountered in the peritoneal cavity one should suspect neoplasm. Very good, but no matter what the general appearance of the contents, thorough investigation should be made before the case is considered inoperable, because many of these tumors, especially of uterine or ovarian origin, may be histolo-

gically benign, when a very simple excision may effect a rapid recovery. In this connection I wish to report another case illustrating such possibilities.

A white female, age 19, single, came in complaining of pain and fullness in the abdomen. Past history: Negative. Present illness: About a year ago, patient first noticed that the abdomen was beginning to be enlarged. This kept up gradually until four months ago when it became so great as to cause notice and much distress. About three months ago begun to have severe dull pains in left lumbar region which have continued with general abdominal distress until the present time. Menstrual history: Begun at 15, regular with no abnormality, until three months ago when they became scant. Physical examination: A young girl, showing extreme anemia and marked distention of abdomen. Temperature 99, pulse 80, respiration 20. Head, neck and chest, negative. Abdomen distended to the costal margin and dull all over. Tenderness and muscle spasm extreme. No masses, but whole abdomen fluctuable. Vaginal: Vulva intact. Cervix normal. Uterus and appendages not palpable. Marked bulging into the cul-de-sac. Urine normal. Blood count, 14,000.

Operation: Upon opening the peritoneum there was fresh blood between the parietes and a rough jagged mass which closely resembled extensive adhesions of all the intestinal contents, except there were no adhesions to the parietes. Upon further examination it was found to be a thick ovarian cyst filling entire abdomen and pelvis, except in the upper right quadrant, where the collapsed intestines occupied a small corner. The cyst contained two gallons of straw colored fluid which was aspirated and the cyst removed. The abdomen was closed in the usual manner. Convalescence was normal.

It is not known just what causes the hemorrhages in this kind of condition, but according to Strauss⁴, hemoperitoneum occurs more frequently from the ovary than any other organ.

Novak⁵ has described the forms of

ovarian hemorrhages according to their relation to the graafian follicle, and divides them into follicular, corpus luteum, and stromal hematomas. These conditions may not give rise to immediate hemorrhage of serious moment, but form cysts which later rupture into the stroma. Still later the distention exceeds the strength of the cyst wall, rupture occurs with profuse bleeding into the abdomen. So, when there is a history of pelvic tumor with sudden pain, shock and other evidences of internal hemorrhage, this condition should be thoroughly considered in arriving at a diagnosis. There is nothing characteristic, however, about the lesion, which will allow it to be differentiated from ectopic pregnancy or even acute appendicitis.

One other type of hemorrhage into the peritoneum which I have not noted to have been dealt with, and one which I think should receive special attention is that following delivery. I feel sure that most of us have seen cases of perfectly normal delivery where the mother soon became extremely weak, shocked and even died with every symptom of hemorrhage and yet certainly not sufficient visible hemorrhage to account for it. Some of these are undoubtedly abdominal hemorrhages and may be brought about in two ways. One may be through the fallopian tubes directly from the cavity of the uterus and the other as a result of breaking up of adhesions that have formed about chronically infected tubes or ovaries while the uterus is high in the abdomen. I believe that most of these cases certainly should have transfusion if life is doubtful. Rupture of the uterus with hemorrhage may also be more prevalent than is suspected.

It is unfortunate that there is nothing pathognomonic of hemoperitoneum, because here, as in all other disease, pre-operative diagnosis is most essential to life saving and successful surgery. Chifolian⁶ describes an umbilical discoloration in hemorrhage of the abdominal cavity, but is in no wise constant.

Sufficient time could not be allotted to this paper to discuss the treatment of

intra-peritoneal hemorrhage, but when the condition is encountered transfusion should be an important measure. Mason⁷, has been thoroughly convinced that the high mortality from abdominal injuries is not due so much to the result of visceral injuries as to the hemorrhages which are so often associated with them. His plea is that patients with large hemorrhages be transfused immediately, regardless of trouble and expense. These latter drawbacks can often be obviated by making use of auto-transfusion, i. e., aspirating the blood from the abdominal cavity into sufficient sodium citrate solution to prevent clotting and returning it into the vein immediately, as has recently been done with good results by White of Washington and others.

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The Ultimate in Medical Wisdom

K. N. Q.—Is it harmful to take a cold shower every morning, especially for a nervous person?

A.—A cold shower is very good for a nervous person, if it agrees with him.—Dr. (Senator) Copeland in Charlotte Observer, June 12, 1925.

HEALTH WORK IN THE SCHOOLS*

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The aims of this activity are, as they have been for some years, health protection, correction of defects and health promotion. As school health work has progressed in North Carolina its scope and effectiveness have increased by the addition of more workers. There are now on the staff for school work in many communities, school physician, nurses—white and colored—nutrition worker, modern health crusade leader, dentist, physical education teacher, and in addition to the regular grade teachers, special teachers of health correlated with one or more subjects.

If the medical inspection which should be given every child on the opening of schools in September finds them to be in better physical condition than in previous years, it means there has been rather thorough and full cooperation and correlation of the services of doctors, nurses, dentists, special workers and teachers with the fundamental aim in mind at all times—the health of the child.

Health service in schools is much less capable of routine methods than is the work of the teacher. Let us visit one of the schools of some North Carolina city and observe the public health nurse and some of her duties as she works with doctor, dentist and teachers.

The nurse reports at the principal's office at 8:45 a. m., already having taken an automobile load of children (a dozen or more) from this school to the dentist's office at the health center, and passes on to the medical service room. Ten children who have been absent more than two days, are waiting for her permission to return to their class rooms.

James is a well-known malingerer with the usual story of a headache and the nurse signs his slip without comment, knowing that the undisciplined home conditions are already being studied and dealt with by a social agency

and that she herself must visit the home constantly until the baby is past the age when careless feeding is disastrous.

Louise reports the arrival of a baby brother and the nurse reminds her that he must be registered at the City Hall by his father, like all good citizens.

Mary was sent home a week ago with instructions for cleaning her infested head, but the condition remains unchanged. Defiantly she declares that her mother says her hair is all right and that the teacher must take her back. The child's respect for her mother must not be weakened, but the quiet talk which is needed to handle the delicate situation will not be possible until later in the morning, so Mary is enrolled temporarily as nurse's assistant. The stories of the other children are quickly considered and they return to their class rooms. One boy, however, must be sent home because notice has not been received from the quarantine officer that the scarlet fever card is off the door. Three other children are sent by the teachers from the class room to the Medical Service room.

Alice has red eyes, is sneezing and is found to have temperature so she must go home with a form notifying the mother that the family doctor should be called. The nurse has little doubt that Alice has fallen a victim to the prevailing measles and records the names and class rooms of the two brothers, for use in the event of a positive diagnosis.

William appears with a sore finger. William's mother is subnormal mentally and the task of teaching her to give the necessary care is difficult. Carefully the hand is bathed and dressed and permission is given to come every morning for a clean bandage.

Johnny's teacher has discovered that he comes repeatedly to school without breakfast. Hesitatingly, the loyal child reveals a condition of neglect that needs the skilful handling of the school work-

*Read before the Meeting of the North Carolina Public Health Association, Pinehurst, April, 1925.

er. The nurse knows that the social worker will meet closed doors unless a welcome is prepared, so she secures the boy's consent to talk the proposition over with his mother, hoping that the next step will reveal itself.

The school physician is not expected until recess and the nurse seizes the half hour remaining to make a class room inspection. Her choice falls upon a primary grade which was inspected only a week ago, but diphtheria is prevalent in the neighborhood and the little tots cannot be relied upon to report sore throat to their teachers. The recess bell rings—but all the throats were clear and she leaves with a light heart.

Arrangements have been made with the school physician for the complete physical examination of eight children. Mothers of these children have been invited to be present but only two of them came. Four children are from the first grade, three from the fourth and the eighth is a third grade child selected for special examination because he shows marked evidence of malnourishment.

The plan of studying a few children with the assistance of their parents is one which is to be preferred to the rapid examination of many, because the parent's cooperation must be secured if the defects are to be corrected, and health habits established. The mother will welcome and understand suggestions given to her by the doctor when she would misunderstand or resent them if received through the child, in addition to which the history that the parents can give is necessary to thoroughly understand the condition of the child.

The first child examined this morning is found to be without defect, but the mother is appreciative of the interest shown and considers her time well spent. She is a member of the Parent-Teacher Association, and suggests that the school physician should address the Association, explaining the purpose of the health work, which is resented by some of her neighbors and their private physicians.

The doctor turns from an examination of the next child to question the

mother as to the family history, and the public health nurse is finally instructed to arrange for an examination of father, mother, and children in the syphilis clinics. Social agencies have had this family under their care for over a year without knowing of the underlying cause of the poverty and inefficient home management.

The mal-nourished child is the oldest in an apparently healthy family. The mother's history reveals the fact that the first husband, the father of this boy, died of tuberculosis when his son was four years old. The second husband is out of work and no occasion having arisen since coming to the city for calling a private physician, the public health nurse will arrange for the boy's examination at the Tuberculosis Clinic connected with the Department of Health. In the meantime an appointment for dental service will be made.

The doctor having completed his examination the nurse now brings to the medical service room from two first grade rooms, which have previously been inspected, fifty children who have never been immunized against smallpox. These children have all brought from their parents requests that they be vaccinated in school. Nurse assisting, the doctor vaccinates the group of kiddies and they are quickly returned to their proper rooms.

The public health nurse returns to Mary who has proved to be a capable assistant, and has a quiet talk with her in the medical service room.

The result of the confidential talk is that the nurse decides to make a home visit on the only day of the week when the wage-earning mother is at home and to help her with a general clean-up of all the heads of the family.

Responsibility for the personal cleanliness of the children must not be assumed by the nurse if she is to conserve her time for duties which cannot be undertaken by the teacher, but sometimes the Mary's in the school need the combined efforts of teacher and nurse.

The Health Service in the schools is

a part only of the work of school physician and public health nurses. The doctor visits another school until three o'clock in the afternoon when he starts on a round of home visits which may be concerned with the control of communicable disease.

Owing to the visit of the doctor the nurse has spent the entire morning in the school. At noon she reports to the supervisor and enjoys lunch with other members of the nursing staff. In the afternoon, she will make home visits. Tomorrow morning she will readmit school children, will examine three classes for evidence of communicable disease or physical defect, and will follow up each inspection with a health talk. Possibly she will tell the children stories about Good Fairy Health and her friends, or she may assist the Crusade Leader in putting on a health playlet with a group of children. With the teacher's cooperation, she is helping the children to establish good health habits, and finds that the appeal of self-interest has proved to be less effective with children than that of class honor or the State's need for healthy men and women. Once having been seized with the desire to be healthy and strong, the child must realize that health depends upon his habits for the seven days of every week in the year, and realizing he must learn self-discipline.

Of the three aims laid down for a School Health Service, the third—Health Education—is the one which must constantly be emphasized by a Department of Health, not only in the schools but in the homes. Tradition and habit have identified doctor and nurse with remedial work, and the inexperienced among them become absorbed in that branch of their service.

While the Health Service in the schools places the emphasis upon health rather than upon sickness, it cannot escape responsibility for securing remedial treatment and is much concerned with the defective and the underprivileged.

Physical defects corrected is not always all that could be desired. For the

pre-tubercular child and those with other conditions which will respond to the treatment there should be established open-air class rooms and possibly a preventorium. The mentally defective and "dull" children have been separated into special classes which is as it should be.

The large numbers of children having diseased tonsils and adenoids by no means receive the attention or sympathy they should have. Many such children are selected for treatment who do not get it because of lack of funds with which to pay doctors' and hospital bills. Clinics to take care of this class of children are needed.

In dealing with tuberculosis also, the great need of sanatorium beds for children is frequently before the school doctor and nurses. When a boy or a girl is discovered to be tuberculous it is almost a tragedy that there are no hospital beds to which they may go.

Dental defects, especially those of the younger children, are well cared for in the Health Department clinics.

The underprivileged child is still another concern of health workers in the schools, since poverty and disorganized homes are both the cause and the result of lack of health. Increasing numbers of children are undernourished and so are unfit to carry on their school work, with the result that free distribution of milk or free lunches have been instituted to deal with the situation.

Modern Health Crusade. The crusade is on solid ground in North Carolina. In my city fully a hundred classes are being conducted, in which are enrolled more than 4000 boys and girls. These children are learning in a positive way what good health is and what it means. Their little chores, the nice stories, the spirit of rivalry, playlets to dramatize health, posters and essays and contests of various kinds keep them interested. Teachers are just as interested as are the children and their splendid cooperation is making possible health instruction of the best type.

One example of the growing interest of the children in health is shown by the fact that they purchased from the

crusade leader during the last two months nearly three thousand tooth brushes, which she was enabled to secure for them at five cents each, and with which is given free a small tube of tooth paste.

Nutrition Work. The need for nutrition work among the children still exists. During the three or four years that this work has been a part of the health program decided strides have been made. In some localities the method of the nutrition worker has been changed from one of intensive training and teaching of a relatively small number of children in selected classes to one of rather general supervision of the nutrition program, directing and encouraging the various groups but leaving actual teaching methods to the teachers.

It is necessary in some instances to supply milk without charge to children who are underweight. This has been a valuable addition to the lunches the children might bring from home. The nutrition leader and nurses find, however, that some children bring no lunch, that others have lunches of very poor quality, and that in many instances the family is not able financially to buy the things their children should have to eat. This condition has stimulated the establishment of lunch rooms at the schools where a nutritious hot lunch is served to children at cost. Some children in every school need to have furnished at no cost to them a nutritious well-balanced meal at noon. Children for this free lunch service must not be selected hit or miss but thorough home investigations must be made by one or more workers of every child before his name is placed on the list for free lunches. This service by no means desires to pauperize any child or family, nor does it wish to leave off any deserving needy boy or girl; on the other hand it uses every precaution to so protect the list that those families who can and should support themselves do so. Funds making possible this free distribution of milk and lunches have been derived from various civic clubs, parent-teacher associations, women's clubs, etc.

Physical Education by Teachers. It

is a pleasure to direct attention to the work being done in the schools by teachers of physical education. This program has been made a part of the curriculum in all the Elementary and High Schools. A corps of supervisors and teachers devote much time to the various means of teaching health from a physical education standpoint. Posture, stunts, games, poster making, dramatics, etc., are all employed to teach health.

Medical Inspection of Health Service in the schools was originally designed to deal with the child, but experience is proving that it is of great value to the community as a whole, in providing an opportunity for the Department of Health and cooperation agencies to deal with home conditions revealed by physical defects or faulty habits in the children. Experience is proving also that the best results are obtained from a Health Service in the schools when close cooperation is maintained between doctors, dentists, nurses, teachers, and social workers, and, above all, with the mothers and fathers. If there has been this spirit of cooperation, perhaps one of the mothers mentioned as being present when her boy was examined by the school physician, as she accompanies her boy home from school at the noon hour, reflects upon the many provisions now made to keep children healthy, as compared with conditions when she was of school age. She considers how the food used in her home is subject to protection by health inspectors; how the ice cream in the corner soda shop which they pass is regularly tested; how individual drinking utensils are provided in public places; and how so many efforts are made to educate both children and parents in the principles of healthy living. She is an intelligent mother and determines not only to avail herself of these opportunities offered but to talk with others about them,—for she has come to understand that these measures have already resulted in increased happiness and longer life through bringing about less sickness and suffering and the building of healthy bodies.

OUR HANDICAPPED CHILDREN*

M. L. Townsend, M.D., Raleigh

The greatest possible asset of any nation, any state or any community is its citizenship. All other assets can only be utilized by the individual and the degree to which they are utilized is in direct proportion to the capabilities of the individual.

What would it matter if our state is abounding in natural wealth—what if her virgin forest-covered hills were filled with metals, coal and precious stones and her fertile plains covered lakes of oil—what if the waterfalls of her wonderful rivers could furnish power to turn the universe and her climate the best her Maker could give; all of this would mean nothing—absolutely nothing—to a people steeped in ignorance and superstition, roaming the woods in naked savagery and inspired to endeavor only by the primal instincts of lust and hunger. Such assets, though the greatest that man could wish, would be as pearls before swine.

It therefore follows, as truly as night follows day, that the nation, the state or the community which excels in progress does so by first building up the standards, the morals and the education of its people. No community standards nor ideals can possibly surpass its average individual standards and ideals.

In the main, people will have exactly what they want. I do not mean what they often say they want, for very often they say they want certain things and then deliberately set about doing the things which will inevitably bring about the very opposite. I mean that in the main people will have exactly what they try hardest to get. When people are educated to want certain things they will have those things.

Laws do not make civilization and Volstead did not make prohibition,—but education, or a growing sentiment against the abuse of alcohol is developing a generation of prohibitionists. The

Eighteenth amendment is a result and not the cause of this public sentiment. Years ago the people of North Carolina wanted better roads and set about in the then most available way to get them by using state's prisoners to work on the roads. Gradually, in the evolution of the state, still better roads were wanted and needed to meet the growing demand. As a result of this insistent public demand, the representatives of the people in General Assembly were compelled to provide the necessary machinery for building adequate roads and the enormous bond issues were the result of public sentiment and not the cause of it.

One great trouble is that so often we put the cart before the horse and do not start real progress where progress really starts. The coming citizenship will naturally and most certainly accomplish the ideals they are being taught to-day.

Practically speaking, then, **THE EDUCATION AND DEVELOPMENT OF CHILDREN IS REALLY THE ONLY THING WHICH NEED VITALLY CONCERN ANY GOVERNMENT.**

If, then, education—moral and intellectual,—is the fundamental basis upon which all progress is built, this education should be universal and thorough. Every child must be taken into consideration and, in so far as possible, the handicaps of the sub-privileged child must be removed. For the sake of society as well as the individual, the handicapped child must not be forgotten nor allowed to drag along behind to ultimately become a charge on society and a burden to himself and his people.

Those children whose moral environment is bad should be given an insight into and an inspiration to attain the higher and better things of life. Those children who have physical defects which handicap endeavor should, in so far as possible, have those physical defects corrected. Those children whose life blood does not run red because of insufficient food should have that defi-

*Read before the Seventy-second Annual Meeting of the Medical Society of the State of North Carolina, Pinehurst, April 28 and 29.

ciency supplied.

Our concern for these children is first for them that they as individuals may measure up to the fullest measure of usefulness, health and happiness. We want them to be able to enjoy every blessing in life that might be theirs.

This is, however, also another phase which must not be forgotten. We must think of a future North Carolina.

Parents have no greater duty toward their offspring than the state has for its children—indeed selfishly speaking, they have not nearly so much. The life of the parent is self limited, the die for him is already cast, his position in society and in life is already established. The achievement, or the failure, of his child can influence but little the parent. The life of the state is not self-limited and its future will be exactly what each succeeding generation makes it. The parent, because of parental love gives his life for his child asking nothing and receiving nothing in return save the consciousness of complying with one of nature's fundamental instincts to perpetuate the species, while the state depends for its very existence upon the children it natures to-day. That is why the state must step in and do for its children what the individual parent may be unable, or because of ignorance, unwilling to do. **THE PARENT'S EXTREMITY IS THE STATE'S OPPORTUNITY.**

When Governor Aycock declared for universal and compulsory education he lifted the state from a quagmire and on every school house hill he lit a beacon fire leading the way to progress. We must admit that with all North Carolina's wonderful history which we hold in reverence, this awakening to the importance of universal education was the dawn of a new era for the state. The fruits of that labor is a generation who to-day are making the world sit up and take notice.

If the state provides schools and compels attendance thereat, then by all right and justice she must see that the handicaps of the sub-privileged child are removed. To compel a child to go to

school, whose physical condition is such that it cannot keep abreast of its normal fellows, is not only brutally cruel to that child and is wasting state's money, but may actually so embitter that child against society that an outlaw criminal is developed instead of a helpful productive citizen.

In so far as parents have knowledge and are able they should be responsible for the correction of the defects of these under privileged children, but where they don't know, or where they can't, or where they wont, then the state for its self-preservation, must.

Psychoanalysts have directed our attention to the fact that seemingly insignificant events in the life of a child have been the determining factors in shaping the future career of that child. We are all fully aware of the fact from personal knowledge, that many children have become disgusted with school because for some reason they could not or did not thoroughly understand the work they were expected to master. They then were impressed with their inferiority. To the subtle, and possibly unintended ridicule of others, is added self-ridicule which aggravates the situation, and what was at first perhaps an innocent failure develops into an antagonistic attitude toward fellow pupils, toward teachers and school and finally toward all society. In the life of most criminals, if the facts can be fully brought out, will be found some incident which, unrecognized at the time, started them on a career of rebellion and crime.

Perhaps the child first failed in school because defective vision made it impossible for him to see as other children saw. He was branded stupid and listless. He fell behind in classes until at fourteen he was where he should have been at nine or ten. Then in disgust at his own failure he finally rebelled against further effort, contented himself with filling the place of an inferior drudge in society or fired by the spirit of battle he determined that all society was his enemy and therefore he became the enemy of all society. Effective correction of defective vision at the proper time would have cost possibly five dol-

lars whereas, directly and indirectly, the life of crime of a Gerland Chapman has cost human life and hundreds of thousands of dollars.

Theodore Roosevelt said that when proper glasses were fitted to his defective eyes it opened up for him an entirely new world of which he heretofore had known nothing. It happened that defective vision was not his only handicap and that this together with other handicaps were such that he was never permitted to attend any form of public school until after these handicaps were sufficiently overcome and he had been prepared by private tutors to enter Harvard College. Except for the removal of these handicaps it is undisputable that Theodore Roosevelt would have been a charge throughout life on his family or on society, and by the removal of them he was permitted to become the very personification of dynamic energy and the inimitable Theodore Roosevelt. Certainly not all children can become Theodore Roosevelts, even with every advantage given them, neither will all children become outstanding criminals however great their handicaps may be, but between every extreme there is a general average. Handicapped children reduce this general average while children who are guaranteed their inherent rights raise this general average.

To the physician more than to any other is permitted the privilege of recognizing these seemingly little things in the life of children which influence and determine their future place in society.

Almost unbelievable progress has been made in recent years in prolonging human life. In 1800 the average age at death was thirty-three years; in 1900 it was forty-two years and in 1925 it is above fifty-four. A generation ago it was tuberculosis which led all causes of death, sickness and poverty. To-day heart disease is the greatest single cause of death in the United States. Of every ten people who die of heart disease, nine are over forty years of age. As conditions which caused early death have been brought under control and as the average span of life is increased,

more and more people arrive at the age when heart disease becomes manifest. There is no indication that heart disease today is more prevalent than it has always been, but it follows that the greater the number of persons who live to the age when heart disease is manifest, the greater will be the number who succumb to this condition. In 1900 the average age at death was forty-two which is before the age when heart symptoms become outstandingly manifest and hence although people were suffering from a serious heart condition which very soon would have proved fatal, yet some intercurrent condition developed which killed them and thus got the credit for the death.

Of all serious and ultimately fatal diseases those of the heart are of the longest duration. For every death from heart disease in any given year there are probably seventeen or eighteen patients still alive who are suffering with it, whereas the comparable ratio in tuberculosis is about seven cases for each death. Tuberculosis does its damage much more quickly.

To-day heart disease in a recognizable form interferes with the work, play or comfort of 2,000,000 people in the United States. At least three of every hundred men and women of working age must reckon with heart disease as a disability in their work or a handicap to their pleasure. Fifteen of every thousand school children have already acquired some definite disorder of the heart. One bed of every ten in the general hospitals of the country is used continuously by a heart patient. One of every four people who visit the dispensaries comes because of some heart condition. The mortality curve from heart diseases rises as the mortality curve for other diseases comes down. The time to cure or prevent heart disease is seventeen or more years before death from heart disease occurs. The mortality curve and the incidence curve of heart disease will however fall in consequence of concerted effort just as truly as it has fallen from tuberculosis but the results will only be recorded

years hence.

If we are permitted to use the term rheumatism as denoting that class of infections which present rheumatoid symptoms then rheumatism and syphilis are THE cause of heart diseases. Since both rheumatism and syphilis are preventable then heart disease is preventable. In the exact proportion to which we eliminate focal infections and rheumatism in children and syphilis will the mortality curve for heart disease in years to come, come down. In the sense that infections and syphilis are communicable, so is heart disease communicable.

The past generation of the medical profession is responsible for the present mounting importance of heart disease. Will the present generation of the medical profession permit the curve to continue high when to-day's children pass the age of forty?

Cleaner mouths, fewer diseased tonsils, fewer neglected decayed teeth, earlier recognition of sore throats, and quick care in their treatment as serious infections, the considered and skilled attention to the little child with aching muscles but accused of having "growing pains," repeated careful examination of the heart after attacks of any acute, infectious fever, and the conscientious separation of the sick from the well, are the means and the only means whereby the number of heart victims will be reduced.

It is a pitable thing to see a child with physical or mental defects—conditions for which he is in no sense responsible—which make it impossible for that child to properly "carry on." What is still more heart-breaking is to see a child maimed for life, becoming a charge on society, and a burden to itself, because of some physical defect that could easily be corrected. And yet if we will but open our eyes that is exactly what we do see on every side. Not always cripples going about in wheeled chairs or on crutches, although we do see that, but living souls and human intellects, maimed and dwarfed, content to

be non-entities in life doing drudgery or crime.

With the daily increase of knowledge concerning these facts, the people are demanding more and more of their doctors, their teachers and their state that these handicaps be removed. And—the important thing is—they are being removed. The state more than ever is awakening to her responsibility and stepping in and doing for her people of all ages and conditions in life the things they demand. Her people are keeping pace with the world in the path of progress. Her future promises all the rewards of honest altruistic endeavor.

Cyrus the Great, on one of his military campaigns, wrote a personal confidential letter to his father in which he explained among other things that he had provided his army with competent physicians. The reply of his father to this point is as pertinent to-day as then and affords an excellent conclusion for this paper. He said: "But these physicians, my son, of who thou speakest, are like menders of torn garments, and thus they cure those who have fallen sick. Thy chief anxiety should be to provide for health, for thou oughtest to take care to prevent thy army from falling into sickness at all."

Your back aches because:

"Kidneys," said the herb man.

"Prostate," said the G. U. doctor.

"Flat-foot," said the shoe doctor.

"Pelvic trouble," said the gynecologist.

"Infected teeth," said the dentist.

"Mal-adjustment," said the osteopath.

"Impinged nerves," declared the chiropractor.

"It don't ache," assured the Christian Scientist.—Medical Herald.

A VETERAN DOCTOR

II. *His Physicing*

H. J. Walker, M.D.
Huntersville, N. C.

My early association with Dr. Herron of Steel Creek was a great help to me. He being in delicate health, I soon had as much work as I could possibly do. With him to guide me in the work I was saved from making many mistakes that I would otherwise have made. Once, in a conversation with Dr. Northington, I remarked that it would be a very good idea for doctors to write their mistakes for publication as a guide to help others avoid those same errors. Among the first mistakes I made was in the diagnosis of what was told me was a case of "shingles." I had never heard of such a disease, and was ashamed to let Dr. Herron hear of my ignorance, so I searched his library through in search of the disease and finally found it in an old volume written in the 17th century. My next failure in diagnosis was between scarlet fever, and measles. No harm came of this mistake. I once had a case of pneumonia that turned out to be gripe. I was called upon once to determine the condition of a patient in pregnancy. My diagnosis raised trouble in the family, and they asked for a consultation; the consulting physician disagreeing with me, a big boy proved me right later on. I had been well trained along that line by Dr. Butler of New York University, who on a lecture on Obstetrics told us that we carried the evidence of pregnancy on our faces which caused much laughter. He said that if on examination of the patient we found the os hard like the end of your nose, the case was not pregnancy; if soft like the lip, pregnancy existed. This test never failed me but once. Called to a case of pernicious vomiting in pregnancy, from which the patient was very much reduced, I found in one of my journals a remedy,—a six per cent solution of nitrate of silver applied to the neck of the womb; with two applications the trouble ceased. With care to protect the surrounding parts from an overflow, I found this treatment suc-

cessful in almost every case.

I had a case once supposed to be abscess of the liver; found patient with high temperature, bowels tympanitic; called two friends in consultation. We differed as to diagnosis. After death an autopsy showed intestines perforated, and liver sound. This patient had previously had an accident in which the neck of the femer was broken, one of the consulting physicians pronounced it a dislocation. When I asked which of the different dislocations it was, he answered that it was no time for technicalities. He being my senior, took charge of the case, and proceeded to reduce the dislocation, when I could hear the bones grating. Not being satisfied with this man's diagnosis, I sent for one of my old friends, who was an Army surgeon. He agreed with my diagnosis. In all, there was six doctors, three agreeing with me as to the fracture, two contending that it was a dislocation. Five years later the patient died, when this autopsy of which I was just telling, was held, this place was opened up, and revealed a broken bone, and the leg shortened about two inches.

I was once called to a patient whose bowels had not moved in ten days, and I found the lower bowel obstructed by dry watermelon seed. All kinds of drugs had been taken with no effect. The bowels being very much distended, I tried to use an enema, but found the passage obstructed. I succeeded in removing the dry seed, after which the bowels moved freely, and the man lived to tell the tale. I was called to a child running a high temperature and found a hard lump in the bowels, which I tried to move by an enema, but failed. Supposing it was worms, I gave a cathartic. Being called to another case, I didn't see the child again until next morning, when I inquired of the mother what the child had been eating, she didn't know, the next night the child died, she told a neighbor that the doctor didn't know what was the matter with Sammie, but



THE DOCTOR (READER'S LEFT) AND HIS BROTHER

1. *Off to the war*

2. *A few years after Appomattox*

that he had been eating damsons, "seed and all."

The pastor of a church in Huntersville called me in and I found evidence of a tape worm. He being a preacher, I thought I must give him the very best treatment, so ordered a very much advertised remedy, which was administered without results. I then used an old home remedy of pumpkin seed, one ounce to a quart of water, making an emulsion by steeping on the stove. This was given in three doses, three hours apart, followed the next morning by a large dose of oil, with 10 or 15 drops of chloroform to put the worm to sleep. Later that day the patient came to my office carrying a very long tape worm. This treatment never failed me.

I have been often called on to remove foreign bodies from the noses of children, from a grain of corn to a shoe button, the mothers' surgical instrument, a hair pin, invariably having pushed it further in. Should I find the obstruction

in the right nostril, I just placed a handkerchief over the child's mouth, applied my finger to the left nostril, closing it, then applying my mouth to the child's mouth, blowing hard the obstruction flies out.

At one time we had almost an epidemic of meningitis, most of the victims falling suddenly into convulsions, to control which we used narcotics to the limit and a counter irritant along the spinal column. A very large percentage recovered, one patient totally blind; another with complete loss of mind. We had a number of cases of hemorrhagic fever, the death rate greater than in meningitis. As to treatment we used quinine in large doses. I will mention two cases of diphtheria. One a girl of twelve years was brought to my office with a temperature of 102. Examined throat, found no deposit. The mother called my attention to her toes where I found the diphtheria deposit. She died. Another case, a boy four years old; I was called



3. Now,—the Doctor 89, and his Brother—a few years younger

late in the night, found temperature 104, found no deposit in throat, but on the forehead where he had fallen on the steps, and one on his leg, I used the usual treatment of the day, (antitoxin had not been discovered), but nothing availed, although I had three medical men called in consultation.

I will give you an experience in obstetrics, a woman came to my office for examination; I failed to make a clear diagnosis, although the abdomen was somewhat distended; three months after this I was sent for hurriedly; I found her in considerable pain, with active hemorrhage. I supposed I had a case of placenta previa, with a heavy discharge of clotted blood. After a time the womb was cleared and well contracted, and I found that I had large clots of blood, (a chamber and wash pan full of this mass), studded like malaga grapes. The patient was very much exhausted, and for a time blind,—as I supposed, by the loss of blood. She recovered rapidly from this, and afterwards bore two children.

A case of aneurysm: the patient living in malarial district, finding him with a temperature of 103 2-5, supposed it to

be malaria and treated for that, with no improvement, I called in Dr. Herron and he agreed with me, but the patient still failed to improve. He complained so much of his back that I asked if he had been hurt in any way. He stated that in lifting a bushel of potatoes to his back he felt something give way. After a very careful examination and finding bowels a little distended, and on pressure hard lump in bowel, I finally concluded I had an aneurysm. I called in a number of medical friends, two agreed with me, and two disagreed. Finally the patient died, the aneurysm still enlarged, and autopsy found the aneurysm situated above the bifurcation of the abdominal aorta, weighing five pounds.

Another case to which I was called had high temperature and was suffering from an attack of dysentery (as I supposed), which yielded to treatment. Found the abdomen somewhat distended which continued until it was necessary to tap him. I had to continue this once or twice a week until I had tapped him in all thirty-two times. I finally sent him to Dr. Tiffany of Baltimore, who wrote me of the test he had made for a

diagnosis but not being satisfied as to the cause of the trouble he asked me to keep him under observation. Later I found he had received a blow over the region of the liver and intestines. This case attracted a good deal of attention, and quite a number of physicians were present at the autopsy.

The Doctor

To me much has been given to see,
My Father has graciously allowed me to
help Him.
I am first to welcome the soul that ar-
rives from Him,
And I am last to say farewell to those
He takes back.
What wonder if now and then I pre-
sume to send
Him a message of my faith and belief.

ABSTRACT of paper on "Unperforated Ulcers of the Terminal Ileum, Symptomatically Simulating Appendicitis," read at the meeting of the American Medical Association before the Section on Surgery, General and Abdominal, at Atlantic City, N. J., May 27, 1925, by J. Shelton Horsley, M.D., Richmond.

The symptoms of appendicitis are discussed. The appendix has a wide range of locality. When in its normal position the inflamed appendix gives the typical symptoms of pain beginning in the epigastrium or around the navel, with subsequent pain, tenderness and muscle spasm in the right iliac fossa. When abnormally placed it may cause pain and tenderness in the median line, the pubic region, along the iliac crest or around the gall-bladder. On the other hand, any one of many other diseases may give the symptoms of appendicitis and must be differentiated. Symptoms, however, which are due to a lesion in the intestinal tract near the appendix may closely simulate those of appendicitis and are more difficult to distinguish. The importance of bearing in mind such lesions is emphasized. Operations for appendicitis are sometimes undertaken

without due regard for the possibilities of other lesions of the gastro-intestinal tract, and the surgeon should be competent to deal with any other surgical condition that may be present.

Three cases are reported with symptoms of appendicitis having tenderness and muscle spasm in the right iliac fossa. A diagnosis of appendicitis was made in each case. In two, at operation a solitary tuberculous ulcer was found in the ileum, and a resection of the terminal ileum with appendectomy was done. The third patient, a boy ten years of age, was admitted to the hospital with a diagnosis of acute appendicitis. At operation the appendix was found to be moderately congested and was removed. The terminal ileum was greatly enlarged and congested. About nine inches of the ileum and the cecum and part of the ascending colon were resected. Grossly the lesion appeared to be tuberculous, but careful microscopic study showed the tissue to be simple inflammatory. All three cases made a satisfactory recovery.

The technic of resection of the terminal ileum is discussed. The method to be used depends largely upon the local conditions. The active peristalsis and the small amount of bacteria in the upper jejunum demand different methods of procedure from those indicated in the more slowly acting ileum whose contents are filled with bacteria. Thus, in the lower ileum it is important to use a technic which will prevent contamination, even though it gives a smaller lumen of the bowel, while in the upper jejunum with fewer bacteria, the importance of an ample caliber dominates the situation. The technic of Kerr is excellent in many of these cases of resection of the lower ileum, but when there is much fat a lateral anastomosis should be done. If there has been obstruction or if cecum and colon are included in the resection, an enterostomy with a soft rubber catheter seems indicated.

SOUTHERN MEDICINE AND SURGERY

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A journal for the promotion and diffusion of usable medical knowledge.

The Unreliability of Medical News in the Lay Press; its Tragic Possibilities, and a Remedy

It is well known that items in the lay press on medical subjects often fail to convey accurate information, and not infrequently serve to give an impression altogether unwarranted by facts. It is not so well known that real tragedies, involving loss of life, are sometimes occasioned in this way. Some fifteen years ago there came to New York City from Germany a Dr. Friedmann, who professed to have discovered an infallible cure for tuberculosis. The doctor did not come unannounced; neither did he make his entry under the auspices of any body of medical men. The pitiable plight of thousands of victims of the disease for which he claimed to have a cure, and the reliability of many of the diagnostic and curative methods for which the world was indebted to the Germans constituted an ideal background for the play; the greed of Friedmann supplied the *motif*; a number of unscrupulous or credulous doctors (with the author) made up the cast, and our largest city lent the stage. Still the audiences were lacking for the performances which were to continue

over many weeks. These could be drummed up only through wide publicity,—wider than could be paid for at prevailing advertising rates.

But certain of the elements in the situation assured this publicity,—and on the front pages. It is known to newspaper men that at all times a large number of individuals are afflicted with tuberculosis; that the course of treatment is long and expensive; and that many, despite the best of care, succumb to its ravages. So when it came to their ears that "a great German scientist who has found a cure for consumption" was coming to America "to give the millions of sufferers from this heretofore incurable disease the benefit of his discovery," here was *news* of the first order! And there followed a spilling of printers' ink approaching in copiousness that now going on about the theory of evolution.

A few respectable doctors, allowing their earnest desires to eclipse their intellectual processes, hailed his advent with enthusiastic acclaim: some, not so respectable, and for whom the limelight has a powerful appeal, followed suit; but at least ninety-five out of every hundred of us recognized the fraudulency of the claims in their very incipency and stood aloof. They bore none of the hall-marks of truth, and most of those of fraud. Friedmann was not recognized in the most trustworthy circles in his own country: he was not being invited to America by those most eager for what he claimed to have and best qualified, by study and integrity, to determine the value of his "cure,"—members of the regular medical profession.

It might be thought that some of these would have been consulted before it was proclaimed to our people that "At last a cure for this dread disease which has baffled medical science through all ages has been found," with particulars as to where the discovery could be found, and with daily supplements of entirely unauthenticated testimonials. Any one of average intelligence could have foreseen that thousands upon thousands of victims of the dis-

ease would leave their beds, spend what little money they had in an endeavor to reach this mirage, and perish untimely as a consequence. All this took place in due course. New York City had to adopt special regulations against the invasion of the tuberculous. There was a report in the press of a doctor in Wisconsin walking thirty miles on snowshoes to board the train for New York to present himself for treatment. In the course of a few weeks, with the lessening of space given in the papers, fewer patients came. Most likely this was largely due to belated activities of the regular profession and to many deaths on the ground. As time wore on the serum and its discoverer sunk into the oblivion, from which they have been snatched for the moment only to point a moral. Whose mind can picture the calamities which were wrought in those few weeks by the combined activities of an avaricious, conscienceless doctor and a reckless, sensation-loving press?

At the last public function at which he appeared as a member of Johns Hopkins University, Dr. Osler expressed some opinions as to the advisability of retiring professors at a certain age, and by way of illustration made use of some references which were immediately seized upon by the press, and published in such a garbled and distorted form as to cause untold unhappiness and many suicides. Here, *verbatim*, is what he actually said: "My second fixed idea is the uselessness of men above sixty years of age, and the incalculable benefit it would be in commercial, political and professional life if, as a matter of course, men stopped work at this age. In his *Biathanatos* Donne tells us that by the laws of certain wise states sexagenarii were precipitated from a bridge, and in Rome men of that age were not admitted to the suffrage and they were called *Deponti* because the way to the senate was *per pontem*, and they from age were not permitted to come thither. In that charming novel, *The Fixed Period*, Anthony Trollope discusses the practical advantages in modern life of a return to this ancient usage, and the

plot hinges upon the admirable scheme of a college into which at sixty men retired for a year of contemplation before a peaceful departure by chloroform It is not to be denied that occasionally there is a sexagenarian whose mind, as Cicero remarks, stands out of reach of the body's decay. Such a one has learned the secret of Hermippus, that ancient Roman who, feeling that the silver cord was loosening, cut himself clear from all companions of his own age and betook himself to the company of young men Whether Anthony Trollope's suggestion of a college and chloroform should be carried out or not I have become a little dubious, as my own time is getting so short."

Clearly, this kindly man no more meant that this suggestion should be taken literally than did the Prophet of the Lord when he taunted the Prophet of Baal with, "Cry aloud; for he is a god!" Yet our news-mongers, avid for sensation, made of it such an account, and sent it forth to the world, careless of the easily foreseen consequences of despair,—even to self-destruction.

In the past few weeks we in this city have had another illustration, and of a different order, of the indifference of the lay press, and others of the laity, to medicine, as represented by men educated in its science and its art. A long-haired peripatetic, somewhere about a clay-bank in complexion and calling himself "The Man Who Knows," comes in and sets himself up at a local drug store, first as a curer of psoriasis, but later getting far enough under the skin to be naming in the daily papers certain citizens of Charlotte as having "witnessed" the expulsion of tapeworms from certain other named citizens, under his treatment!

Apparently the laws governing medical practice are applicable only to *bona fide* doctors, and based on the assumption that the tendency of medical schools is to deprive those who take these courses of that complete knowledge of the healing art which, it would seem, is all mankind's native endowment; therefore we are subjected to examina-

tion, regulation and taxation, while "The Man Who Knows" goes his glad and golden way, vexed by none of these.

In publishing accounts of epidemics, unusual accidents, monstrous births and supposedly marvelous cures, newspapers generally contrive, or just happen, to either cast a certain amount of discredit on the medical profession, or to make for it an enormous amount of work in explaining away misconceptions or fears which have thus been sown. Is it well that these things should be? We think not. Have we a remedy? We think we have.

If the regular medical profession has a tenth of the influence in the state to which its services entitle it, and which the peoples' spokesmen in other callings (not taking into account medical commencement orators) say we have, it should be a very simple matter. Let each county medical society appoint a committee of whatever number seems most advisable, to be known as the Committee on Publicity, the function of which will be to pass on all material submitted to it by the local papers, and, further to contribute material for the papers from time to time expressing the attitude of regular medicine on matters of public and private health, advocating needed medical legislation, and if occasion required, exposing frauds of a medical nature or defending the profession from attack. Notify the local papers of the appointment of this committee and its purposes, and they will cooperate to the great amelioration of this present deplorable state of affairs, to the saving of lives, and to the rehabilitation of the medical profession in the respect and esteem of the people.

Parks For Recreation and Health Preservation.

In the April issue of his journal was carried an announcement that the Twelfth National Recreation Congress would meet in Asheville in October.

Ordinarily, in speaking of recreation, we have in mind some active amusement or entertainment involving some form of

exertion on the part of ourselves or others. It does not occur to us that recreation takes place best when we are in a state of passivity.

It is very fitting that this Congress should meet in North Carolina, a state containing no large cities, but many small ones, which were only recently towns. Towns pay little attention to parks. They do not need to, for the green fields and shady woods are at their doors, and it requires only a few minutes' walk to take one to a cool grassy spot close by a spring, or to a fine growth of oak where he can ramble at will.

Old cities have had years in which to realize their need of such areas and have provided parks for their citizens.

The newly arrived city commonly stands in need of these things. In many instances the only available out-door diversion for evening or Sunday is charging up and down the asphalt or concrete in a motor car; and the picture show offers the only alternative attraction in the week.

There is much talk in many places of public golf courses, and they would probably serve a useful purpose; but most of the cities of the State have a more urgent need which should be supplied at once. The majority of men who care for golf are amply able to provide themselves with facilities for its enjoyment; the taste for grass, flowers and woods is well-nigh universal, and the need for near at hand spots on which these grow is most acute in the case of infants who babble not of golf.

Can a city spend money more wisely than in providing parks to which the whole family can repair in the evening, escaping the heat and oppression of flat, cottage, mansion or average home, and perchance, hear music of a kind to soothe, gratify and elevate?

And on sweltering afternoons where else is a mother or nurse to take the babe in arms that it may not be withered by the heat reflected from walls and streets?

Charlotte is peculiarly fortunate in having the requisite grounds. When

will it appropriate the funds for grass, flowers, seats, care, and,—still perchance, music?

Information on Poliomyelitis (Infantile Paralysis)*

The following is the general scheme for meeting the situation as outlined by the New York City Department of Health, July, 1916:

"Information for the Public—Infantile paralysis (poliomyelitis) is a catching disease. How it is spread is not yet definitely known. In most cases the disease is probably taken directly from a sick person, but it may be spread indirectly through a third person who has been taking care of the patient or through children who have been living in the same household.

The early symptoms are usually fever, weakness, fretfulness or irritability, and vomiting. There may or may not be acute pain at this time. Later there is pain in the neck, back, arms or legs, with great weakness. If paralysis is to occur it usually appears from second to the fifth day after the sickness begins. Many cases do not go on to paralysis.

The germ of the disease is present in discharges from the nose, throat and bowels of those ill with infantile paralysis even in the cases that do not go on to paralysis. It may also be present in the nose and throat of healthy children from the same family. Do not let your children play with children who have just been sick or who have or recently have had colds, summer complaint, etc. For this reason children from a family in which there is a case of infantile paralysis are forbidden to leave their home. If you hear of their doing so report it at once to the Department of Health.

"How to Guard Against the Disease—

In order to prevent the occurrence of

this disease, parents should observe the following rules:

Keep your house or apartment absolutely clean.

Go over all woodwork daily with a damp cloth.

Sweep floors only after they have been sprinkled with sawdust, old tea leaves, or bits of newspaper which have been thoroughly dampened. Never allow dry sweeping.

Screen your windows against flies, and kill all flies in the house.

Do not allow garbage to accumulate, and keep pail closely covered.

Do not allow refuse of any kind to remain in your rooms.

Kill all forms of vermin, such as bedbugs, roaches, and body lice.

Pay special attention to bodily cleanliness. Give the children a bath every day and see that all clothing which comes into contact with the skin is clean.

Keep your children by themselves as much as possible. Do not allow them to visit moving picture shows or other places where children may gather.

Children should not be kept in the house; they should be out-of-doors as much as possible, but not in active contact with other children of the neighborhood. Do not take them on a street car, unless absolutely necessary, or shopping.

"Do not allow your children to be kissed."

It is perfectly safe to let your children go to the parks and playgrounds if only two or three of them play together; they should not play in large groups, and you should not let them come into contact with children from other parts of the city.

Remember that children need fresh air in the summer time, and outdoor life is one of the best ways to avoid disease.

If there is a public shower bath in a school in your vicinity, send the older children there every day for a shower bath. This is perfectly safe and will help keep them in good health.

Give your children plain, wholesome food, including plenty of milk and vegetables.

*A considerable number of cases of this dreadful disease being reported over the Carolinas, and the arrival of the volume of Abt's Pediatrics make a coincidence which is significant. This article is quoted from Abt.

Keep the milk clean, covered and cold. Do not allow the milk or any other food to be exposed where flies alight upon it.

Wash well all food that is to be eaten raw.

In Case of Sickness—Remember that during the hot weather children are apt to have stomach and bowel troubles. If your child is taken sick with loose movements of the bowels, or with vomiting, do not at once fear that it must be infantile paralysis; it may be simply digestive disturbance. Give the child a tablespoonful of castor oil and plenty of cool water to drink, and *send for the doctor at once*.

If you cannot afford a doctor's services, telephone the Department of Health and one will be sent free of charge.

If a doctor or nurse from the Department of Health visits your home, give them all the information you can. They are sent to show you how to keep your children well.

Do not give your children patent medicines or buy charms of any kind to ward off disease. *The best preventive is cleanliness and strict observance of the rules that have been given.*

Information for Physicians—Early Diagnosis—The attention of physicians is called to the necessity of an early diagnosis of all cases of poliomyelitis. Early recognition and strict quarantine are the chief weapons against the disease.

Reporting of Cases—All suspicious cases must be at once reported to the Department of Health by telephone, to be followed within 24 hours by a written report. The ability of the Department of Health to limit the spread of the infection depends upon the immediate reporting of every suspicious case.

Age of Persons Affected—It should be remembered that this disease may occur at all ages, although the great majority of the cases are found in children between the ages of one and five years.

Type of Disease—Peabody, Draper and Dochez, of the Rockefeller Institute,

give the following classification of the disease:

1. The non-paralytic or so-called abortive cases.

2. The cerebral group, with spastic paralysis.

3. The bulbospinal group.

Methods of Infection—The experiments of Landsteiner and Popper in Germany; Kling, Peterson and Wernstedt in Sweden, and of Flexner and Noguchi in this country have proved that the disease is transmitted by the secretions of the nose and mouth and the bowel discharges of an infected person. The infection is transmitted through the mouth, tonsils and nasal mucous membrane.

Contacts and Carriers—It must be remembered that while the transmission of the disease from a patient to other members of the same family is not usual, transmission of the virus is common. Experience warrants the assumption that in addition to direct contact the disease is spread by carriers, usually children, who are themselves immune but who harbor the infective material in their nasal or mouth secretions.

Symptoms—Early symptoms to be regarded as suspicious are: Fever, vomiting, slight diarrhea, listlessness, unusual fretfulness, and drowsiness. Later and more characteristic symptoms are: The appearance of weakness in any extremity, skin and muscular sensitiveness, spinal pain, especially on flexion, apparent or real rigidity of the neck muscles, Kernig's and MacEwen's signs.

Course and Duration of Disease—Paralysis appears usually before the sixth day of the illness; it may occur as early as the first day. Other symptoms, especially spinal and muscular pain and rigidity and skin sensitiveness, rarely persist.

Non-paralytic or So-called Abortive Cases—Non-paralytic or so-called abortive cases are very frequent. In some epidemics they constitute from 25 to 50 per cent of the diagnosed cases. The children have the early symptoms just mentioned, perhaps also the muscular

tenderness and spinal pain. If carefully observed it may be noticed that they develop a paralysis of one or more groups of muscles, but that instead of the paralysis continuing it all disappears within a few hours. It is obvious that the recognition of such cases is of extreme importance in controlling the spread of the disease. The diagnosis of such cases is greatly facilitated by the examination of cerebrospinal fluid obtained through lumbar puncture.

General Care of Patient—Complete rest is of the utmost importance for either paralyzed or weak muscles for the first five or six weeks. Every effort must be taken to make this rest complete. The limb must not be allowed to drag on a paralyzed muscle. It should be supported by pillows or pads or bandages. There seems to be a greater tendency to atrophy if casts are used. A dropped foot may be supported by a sandbag or pillow; small rolls placed under the knee often hold the leg in a more comfortable position. The weight of the clothing should be kept off the legs by hoops or other device. If the head is somewhat retracted and the patient desires to lie on his back, he may sometimes be made more comfortable by a small pillow placed under the shoulders, allowing the head to fall back. The value of electricity for treatment in the first six weeks is very doubtful. In many instances it may do harm. Massage or passive movements should not be begun for at least five or six weeks and then should be used with great care. In cases that show a tendency to clear up rapidly the child should be kept in bed for some time after the ability to use the muscles returns. It should never be encouraged to try to stand or to use the muscles otherwise until a considerable time has passed.

Period of Incubation and Duration of Disease—The incubation period has been officially set at two weeks. Non-immune, infected persons usually manifest symptoms of the disease in from 5 to 10 days after exposure. The average period of incubation is seven days.

The early symptoms, noted above, usually last from one to seven days. Quarantine of the patient will be maintained for a period of at least eight weeks.

May 21, 1925.

**Report of Committee of Medical Society
of the State of North Carolina on Physi-
cians' Liability Insurance to the
House of Delegates of Said Society**

We hereby report that we have carefully considered the propositions offered to the members of the Medical Society of the State of North Carolina by certain insurance companies offering special rates to members of the Society for physicians' liability insurance, and are unanimously agreed that in our opinion the group insurance offered by the Accident and Liability Department of the Aetna Life Insurance Company, of Hartford Connecticut, furnishes the broadest protection and best service for the cost. Therefore, in accordance with authority granted us and specific instructions given us to act in this matter by the House of Delegates of the Medical Society of the State of North Carolina, at their meeting in Pinehurst, April 30th, 1925, we hereby unanimously accept and recommend the group policy offered by the Aetna to members of the Medical Society of the State of North Carolina.

(Signed)

Frederick R. Taylor, Chmn.

C. W. Banner

L. B. McBrayer

DEPARTMENTS

GYNECOLOGY AND OBSTETRICS

ROBT. E. SEIBELS, M.D., *Editor*
Columbia

The Relation of Extraneous Disease to Eclampsia

In a study of 1708 pregnancies to determine whether or not there was a relation between extraneous disease and subsequent toxemias, Lawrence brings to light some observations of considerable importance.

The general infections,—influenza, pneumonia, acute inflammatory rheumatism, scarlet fever, furunculosis, and typhoid fever,—render a woman particularly liable to develop eclampsia. Of the chronic organic defects, renal disease and cardiac defects predominate in the histories of those developing toxic manifestations.

The author further shows that there is no evidence of a relation between the incidence of concurrent disease and eclampsia except in respect to bronchitis. Although syphilis has a higher rate in the toxic cases than in the control, it decreases in frequency as the severity increases and is absent in this series of convulsive cases.

(The importance of taking and recording a careful history of previous illness is brought forcibly to the attention of the obstetrician by this study: being on guard against the liability of toxemias to develop is half the battle in their prevention. Ed.)

Lawrence, J. S.: *Amer. Jour. Obst. and Gynec.*, 1925, ix, 351.

Foreign Proteins in the Treatment of Pelvic Infections

Ordinary market milk is boiled for about five minutes and from five to ten mils are injected intramuscularly in the buttock, the site being two inches below the crest of the ilium

in the posterior axillary line. There is usually a sharp reactionary chill, rise in temperature and increase in pain in the pelvis, beginning in six to eight hours and subsiding after twenty-four hours. After this reaction the general condition of the patient is much improved, subjectively and objectively. The injections are given at intervals of five to seven days and the patients should be warned of the expected reaction.

The indications for these injections include acute infections with pain and tenderness in the region of the adnexa but with no enlargement; infections with palpable enlargements of the adnexa; patients with large collections of pus in the pelvis who are waiting for, but whose general condition will not permit operation.

Mohler reports ten patients who were given five or six injections of milk at weekly intervals, the milk having been boiled as described. In all these patients there was a marked improvement in the general condition, pain diminished, gain in weight, appetite improved, and hemoglobin increased. There were no cases with anatomic lesions who were improved to the extent that the lesions could not be recognized after the treatment.

It must be recognized that the other means of treatment must be carried on in conjunction with this—rest in bed, light diet, and avoidance of influences that tend to aggravate the condition.

(This method may be useful to help convert a poor operative risk into a good one. It is not applicable to ambulant patients. Ed.)

Mohler, Roy W.: *Foreign Proteins as Adjuvants in the Treatment of Obstinate Pelvic Infections*. *Amer. Jour. Obst. and Gynec.*, 1925, ix, 365.

MENTAL AND NERVOUS

JAMES K. HALL, M.D., *Editor*
Richmond

Darrow the Divester

I believe that the State of New Jersey is without a medical school because some law prohibits the dissection of a human body within that Commonwealth. The personal investigative procedure which has for its object disclosure of the structure of the human body is thought by many to be somewhat unpleasant, if not actually gruesome. Yet no satisfactory substitute for that method of discovering just how wonderfully mankind is fashioned in the inward parts has been devised.

The first-year medical student who is set to the unusual task of removing from some human being, long dead, the macerated skin, the yellow subcutaneous fat; who is instructed to separate muscle from muscle, organ from organ; who is told to follow the alimentary canal in the depths of its tortuous windings; and who is instructed briefly by his guide about the coursings of the blood vessels, the branchings of the nerves, the convolutions and depressions in the brain—Oh, well, the early medical student becomes willing to accept the statement of the Psalmist that we are fearfully and wonderfully made, and in those first days of dissecting he wishes mightily that he were back in the once happy home. But if he insist upon having first-hand information about the divine plan pursued in the creation of a human being he can obtain that information for himself in no other way than in the dissecting room.

Yet it may be a fortunate circumstance that most persons are satisfied with the possession of superficial knowledge of the structure of their own physical being. A world filled with anatomists would be a strange and perhaps an uncomfortable society in which to live.

At the recent meeting of the American Psychiatric Association in Richmond Clarence Darrow, of the Chicago bar, delivered the annual address. He was heard by an audience which filled a very large hall—an assemblage of doctors,

lawyers, and folks of various sorts. He said he would talk about the sane treatment of crime,—and he did, and he talked also about almost everything else. Before that large body of people he stretched out upon his dissecting table many of our cherished ideas and laws and philosophies and customs and conventions, and he dissected them down to the naked bone. He wondered what conscience is,—and truth, and justice, and true religion.

Mr. Darrow has seen many representatives of the so-called underworld, and some members also of the upper world, and he seems to be of the opinion that the individual has little to do with fixing his own place in the universe. Heredity, he seems to think, and outward circumstance, over which there is little individual control, are the dominating factors in life.

With reference to crime, Mr. Darrow is emphatic in the statement of his observation and experience that most criminals are poor in purse and in mental equipment. The jails are inhabited by the mentally inefficient who represent the economic backwash in the struggle for existence. Those who are mentally well-endowed are able to wrest a living out of the struggle with their fellows. Those weak in mind and distorted in mentality are driven into thieving and thugging in the dark. He believes that early training of the hands in some art or craft that would ensure a livelihood, would thereby prevent the development of criminal behavior. He objects to capital punishment mainly for the reason that it has been practically abolished in this country. The individual on whom it is inflicted is unfortunate beyond his fellow-criminals. Not more than a hundred criminals are legally executed in the United States each year. The number is so small when sprinkled out amongst the fifty states that Mr. Darrow doubts if two executions per state have any profound influence in preserving the civilization of the state. He advocates the wisdom of attempting to get at the origin of crime—the effort to find the fountains out of which had behavior flows. Enough

legitimate killings have been brought about by judicial decree and in warfare to make of this earth a tropical paradise if a paradise could come into being in that way.

Dissection of the human body is a prerequisite to a knowledge of bodily structure; an understanding of structure must precede comprehension of function; disordered physical function implies the probability of structural change, if not actual disease.

The same sort of reasoning might not unprofitably be applied to our laws and customs and religions and behaviors. Occasionally they stand in need of dissection. It is necessary at times to strip them down to the bony skeleton in order to see if they be made right. Socrates did that; he was killed: Paul did it; he was killed: Cromwell did it: Thomas Jefferson also, and Patrick Henry.

An elderly member of the Psychiatric Association said Mr. Darrow's address was an outrage; a member of the Virginia Bar Association said—well, what he said is not typeable. But Mr. Darrow is fixed in cheerful pessimism. He expects not too much of mere man. But Darrow is a divester—awakening, interesting, stimulating, sometimes almost insulting—to some folks.

June 1, 1925.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
Charlotte

Henderson, Melvin S.: Pseudarthrosis of the Tibia in Children. *The Journal of Bone and Joint Surgery*, 1925, vii, No. 2, 340.

"Pseudarthrosis or non-union of fractures fortunately is rare. The condition may be defined as a state in which there is no attempt at repair. It is particularly difficult to deal with at any period of life, but in infancy and childhood it may be included among the most difficult that the surgeon is called on to treat. The usual situation in the tibia is at the juncture

of the lower with the upper two-thirds of the shaft.

"The classification of the congenital type in the tibia consists of four subgroups: (1) well marked anterior angular projection, but no fracture at birth; (2) the same as group one, but with the development of pseudarthrosis after slight trauma, or after an operation to correct the deformity; (3) pseudarthrosis present since birth; and (4) an unaccountable condition in which at birth the child appears normal, but later on, following slight trauma, a fracture occurs which develops into pseudarthrosis.

"The cause of the development of such angulation and the reason why the fracture, when present, fails to unite are not known, and naturally many theories have been advanced. Frattin believed that intra-uterine pressure, due to amniotic cords or adhesions, might well be a factor. Codivilla believed that an embryonal lack of development due to the inactivity of certain cells was the cause, arguing that a congenital lack of development of the nutrient artery could very readily so starve the bone cells that their normal growth and activities would be inhibited. He called attention to the fact that in the upper fragment the surrounding muscles and tissues, with their free blood supply, would carry blood by collateral channels to this portion of the bone, but that the lower fragment is not so fortunately situated, for the surrounding tissues are mostly non-vascular. Children with this condition usually are normal except for this deformity, and a local deficiency rather than a constitutional cause is indicated. On such a basis the theory of a congenital deficiency in the circulation to the bone is perhaps the most acceptable.

"The treatment of these cases is quite as unsatisfactory as the search for the cause. The various operations may be grouped under four headings: (1) The Italian method used by Codivilla and Reichel, consisting of a cutaneous osteoperiosteal pedunculated graft from the healthy tibia to the fracture, allowing sufficient time for the transplant to be-

come adherent before severing the pedicle of the flap. This is a tedious process, Reichel's patient being fifteen months in fixation, Codivilla's eleven months, and Nove-Josserand's eight months. (2) The method of Albee, using the inlay graft. Theoretically this would be the method of choice, particularly if there is loss of substance, but it has been most disappointing in cases of congenital pseudarthrosis. (3) The osteoperiosteal graft (Delangiere), and the plastic osteoperiosteal methods, limited largely to cases in which the fragments are more or less in contact. (4) Massive graft. The unsatisfactory results are demonstrated by the fact that such an accomplished surgeon as Putti, at the last French Congress of Surgery, reported thirteen cases with eleven failures."

The author reports a study of nineteen cases of pseudarthrosis of the tibia developing in children. Definitely congenital cases in which there is absence of bone are not included. These cases fall into the general classification mentioned. All nineteen cases were operated; thirteen without success. The six successful cases were operated after puberty.

"Syphilis was ruled out in all cases; however, in one instance the mother gave a positive Wassermann reaction, but the father and the patient gave negative reaction. This patient cannot be traced. In some of the recent cases analyses of the blood were carried out and the calcium, magnesium, and phosphorus were found to be normal.

"From a review of our cases my impression is that with prolonged fixation and support (one or two years) in a walking caliper, in two cases (Cases 1 and 15) the union that was secured might have been maintained. The later in childhood the fracture is sustained the better the prognosis after surgery.

"Amputation is not justifiable, for if these children are carried beyond puberty their fractures become more amenable to surgery, and they will have somewhat more nearly the percentage of good results that the adult has with ordinary pseudarthrosis.

"Pseudarthrosis, congenital or acquired in infancy or early childhood, is extremely intractable. The condition is sufficiently rare to make the experience of any one man rather meager. From the recent literature one would judge that the osteoperiosteal grafts were the best. My experience leaves me without choice, except that in treating a rather large number of non-unions in adults I found the larger autogenous grafts to give the best results, and see no reason why the same should not apply to children."

PEDIATRICS

FRANK HOWARD RICHARDSON, M.D., *Editor*
Brooklyn, N. Y. and Black Mountain, N. C.

Simplified Infant Feeding

Why is infant feeding becoming so much more simple a matter today, than it was when we were taught it in medical school, years ago? A flippant reply might be, "Because it could not possibly be made more complicated!" Such an answer would not be hopelessly wide of the mark, either.

The fact remains that infant feeding is being made a much more simple matter today than many of us remember it, as taught us in the few hours assigned for pediatrics among the "more important" fourth year major subjects. The general impression carried away from the old pediatric course, whether brought about innocently or designedly by the teacher,—was that infant feeding was such a deep, abstruse subject, that there were but few mortals who ever could hope to master its infinite perplexities. The direct and inevitable result of such an attitude on the part of the teacher, is seen today in the very widespread and general self-disgust manifested by the rank and file or the profession, when called upon to "make a formula" for a baby. That many men have allowed the proprietary food manufacturers to do their prescribing for them, while others have allowed grandma to usurp their place, need surprise no one. It is by no means uncommon to hear from the very best informed among our general prac-

tioners, a perfectly frank admission that they know little or nothing about feeding babies.

Of course, we know that such an attitude is all wrong. If the doctor confesses to an ignorance of how to keep a well baby properly fed, how can he hope to be able to keep it alive when it becomes sick? Have we any reason to dismiss any branch of medicine with a cavalier wave of the hand as being something beyond our ken,—and still fail to withdraw in favor of some one who *does* understand what our patient needs?

Of course, the very obvious answer to this state of affairs is, that infant feeding has been made quite unnecessarily cryptic an affair. If, as we were led to believe in college, and as one is quite apt to hear expressed in a pediatric section even today, the feeding of an individual infant were such a terrific task that only the most erudite could hope to direct it, the inevitable conclusion would be that most babies never could hope to grow up at all! For we know that relatively few of the yearly crop of babies are ever brought to any doctor for feeding oversight,—far less, to any such rare individual as we have been discussing. And yet, we are obliged to admit that quite a sizeable fraction of the infant population eventually do attain to man's and woman's estate. So that, if the great majority of babies who *never* see a doctor are fed fairly satisfactorily, it certainly should be possible for any and every doctor dealing with children to learn a simple technique which will work in the large majority of such cases as do come under medical supervision.

The old systems of infant feeding do not hold out such a hope. We have found, time and time again, that the average medical man,—such a one as will struggle painfully to acquire the skill requisite to the management of such diseases as come under his care,—will *not* devote himself to the acquisition of such a painful and complicated collection of rules and regulations as is involved in even the simplest of the so-

called feeding systems. Whether you call it percentage feeding or caloric feeding, top fat feeding or split protein feeding, lactic acid feeding or top-milk feeding, the average medical man will have none of it. This is not a theory,—it is a condition which every teacher of graduate students in pediatrics comes up against, with painful certainty. And it behooves those of us who believe that current medical practice is to be improved, not so much by training specialists as by helping to improve the equipment of the average doctor, to work out some way in which the average man can be taught to feed the average child.

Just such a way has been found,—and is being taught today to men gathered in groups for postgraduate study, who have tried in vain to master one of the old systems in such a way that they could satisfactorily feed even a small proportion of the babies that came under their care. If the mountain will not come to Mohammed, it seems as of the only way to effect the desired propinquity is for Mohammed to bring himself to the mountain! And that is just what the successful pediatric teacher, who essays to get his message across to the practising physicians in his courses today, must bring to pass.

How simple can one make infant feeding, then? The first and obvious answer, that will be given here of course,—obvious at least to any one who knows the personal bias of the editor of this Department,—is, to keep every baby on the breast! But granting for the sake of argument that there were any large percentage of the population which could *not* be kept on the breast,—how can the feeding of such children be made simple enough that it can and will be satisfactorily conducted by the man without special pediatric training?

What follows may be painfully unorthodox. And yet, inasmuch as this column is conducted for adult thinking practitioners of medicine, who are not compelled to take things on faith, but may be trusted to work out any suggested treatment with discretion and control, and to discard it if it does not work, the editor is going to offer very

humbly what he honestly believes will solve the greater portion of the feeding problems of the great proportion of his readers. Here is the method suggested:

Without any preliminary purging, starving, or fasting,—as we used to be taught was necessary in order to remove the harmful traces of the child's previous feeding from the intestinal tract,—make up a day's feeding for the baby as follows. If he is under two months of age, prepare a half-and-half mixture of water and the cleanest milk you can procure, by first boiling the water for a minute or so, next adding an equal quantity of milk, bringing the whole to an active boil, and boiling it so for three minutes by the clock. A good starter is 20 ounces of milk to 20 ounces of water. If the milk seems very rich, discard from one-half to two-thirds of the cream, before shaking up the bottle. To this, as soon as you remove the open saucepan from the stove, add four level tablespoonfuls of dextrimaltose, if the baby weighs *less* than ten pounds. If he weighs *more*, add six instead of four. Divide this amount of food into five bottles; and feed the baby as much as he wants, at 6 a. m., 10 a. m., 2 p. m., 6 p. m., and when he wakes up during the night,—which will generally be around midnight. If the baby leaves much of the mixture in the bottle, cut down the amount of water when you make his feedings the next day. If, on the other hand, he wants more than you have to offer him, then next day keep the water the same and add more milk. Proceeding in this way, without letting oneself fear the ancient bugbear of over-feeding, it will not be long before the baby will be getting the whole quart of milk (less perhaps the upper two ounces of discarded cream), to perhaps half as much water,—in other words, a two-thirds milk mixture. When he is five months old, begin to offer him a little cooked cereal, with some of the milk mixture poured over it; and as this addition leaves room for less and less of the milk mixture, keep decreasing the amount of water added until, at around six months of age, the boiled milk has

no diluent whatsoever. In all this time, remember that the baby is not to be penalized by the withholding of his meal, if he inadvertently spills up part of what he has taken; nor is he to be accused of the boggy of childhood, colic, if in his hunger he dares either to cry or to draw his legs up on his little tummy!

The above suggestion is offered in all humility. The editor would greatly appreciate hearing from any one of his readers who tries this; and will gladly give space to chronicle any mishaps that may arise from following it literally. While he will be still more pleased to receive experiences of its successful application, he cannot be equally lavish in promising to record such successes,—for he is quite sure that if he did, he should lose all the fun of expounding his theories and practices here, and would be crowded off by lack of space into the more dignified pages of this journal! This simple procedure has brought peace and comfort to so many babies and mothers,—an decreased volume of sale of so many colic remedies,—that it does seem worth giving a trail to,—even at the risk of being styled *unscientific*,—the awful fate suffered the other day by the one who is here trying to get others to descend to an equally depraved state with him. For after all pragmatism is a pretty good principle to go by; and the thing that works well is more truly scientific, no matter how simple it may seem, than the densest and muddiest of abstruse processes.

RADIOLOGY

JOHN D. McRAE, M.D., Editor
Asheville

The Future of Radiology

An editorial in the June number of "Radiology" discusses this important and fascinating subject. It calls attention to the slight attention paid to those who took up this line of work in its infancy and to the marked change which has come about in this regard since the

possibilities of this agency for good have come to be recognized. It is noted that, with the passing of the lay radiologist we are confronted by even more serious conditions, one of the most serious of which is the commercial laboratory. Some instances are known in which such institutions have secured the name of a physician, under which it operates, when the physician himself has no active connection with the laboratory.

The capitalization of the x-ray departments of hospitals at the expense of the radiologist, himself, is deplored; likewise the purchase and operation of machines by those ill-trained in the technique of production or interpretation of pictures.

A remedy is proposed in the form of education of physicians to the true status of radiological work. A concerted move by organized radiology is advocated. The present is regarded as a critical time in the life of this specialty, and it is stated that "unless properly guided, years of fruitless endeavor may be spent in an effort to absorb radiology into the various medical specialties, which might better be used in the natural advancement of the science."

EAR, EYE, NOSE AND THROAT

HENRY L. SLOAN, M.D., *Editor*
Charlotte

A Point in Laboratory Procedure

Eosinophiles are frequently found in the conjunctiva in vernal conjunctivitis, and they are not infrequently in the conjunctival secretion. In cases where the diagnosis is doubtful the finding of these cells is helpful in arriving at one. Dr. Emory Hill of Richmond, Virginia, has suggested a useful laboratory procedure in this connection. He uses a few drops of a weak solution of dionin, waits a few minutes for the reddening of the conjunctiva; the smear will then often show eosinophiles in abundance. I have found this suggestion very helpful in a number of cases.

DENTISTRY

W. M. ROBESY, D.D.S., *Editor*
Charlotte

Infection About the Teeth

After all periods of stress there is always a tendency to a period of relaxation. Many things were done during the active period of the war which were viewed with different eyes after peace was established. So it is with focal infection about the teeth. The tendency even in the dental profession itself, is to be bored and tired of the subject. Each speaker on the subject offers an apology for mentioning it.

But infected mouths and teeth are still with us and always will be until we find some method of control of the "strep" and the "staph" and the ninety-eight other varieties of bacteria that inhabit the human mouth.

There are three distinct schools of thought prominent among the dentists of today: diet as the prime factor in disease, susceptibility of the host, and infection. As far as they go, they are all right, they are all links in the same chain, but without infection all would fail.

The North Carolina Health Bulletin for May makes its first statement as follows: "Old age is simply the result of the inability of the body to keep the blood and tissue fluids free from poison."

The ideal, from an oral standpoint, is to keep the mouth free from infection from infancy. "A clean tooth does not decay" is an old dental axiom. But the ideal is only approximate. The fact is that in our present state of unperfection, we have not been able to prevent infection in the human mouth. Caries of the teeth has always appeared in varying degrees, in the different individual mouths, more prevalent as civilization becomes more highly developed.

The passage of bacteria through the dentinal tubules from a cavity of decay which has not reached the pulp has been shown by enough observers to be accepted as a fact. The passage of bacteria through the blood stream to some

point of weakness is generally accepted.

The susceptibility of the dental pulp to irritation from trauma, extreme temperature, etc., may produce inflammation and swelling inside the bony box of the tooth; this resulting in strangulation gangrene of the pulp without infection. Here we have developed a wonderful little incubator ready set with heat, moisture, food and ready for bacteria, with the only opening at the apex of the tooth inside the jawbone. The susceptibility of host is the unknown factor.

External to the tooth we have the incubator ready set, only larger, with heat, moisture and unending supply of food and bacteria always present. A break in the mucous membrane from hard food, tooth picks, dental floss, an infected toothbrush, instrumentation by the dentist, etc., and we come again to the susceptibility of the host as the unknown factor.

Except for the degree of non susceptibility of the host and efforts of mere man in producing immunity, the case might appear hopeless. The answer is the lymphatic system, and, such helps as the dental and medical professions may add.

Therefore familiarity must not breed contempt; we must not be bored; we must give the same consideration to dental infections that we give to any infection in the human body.

Perhaps infections in the head are no more virulent than infections at other points, but in the head we have more inaccessible points to harbor hidden infection than the same area in any other part of the body affords.

Clinically it may be impossible to separate definite results from coincidence, but we do know that coincidence is so rare as to be remarkable, while the favorable results from the removal of dental focal infection are so numerous that many of them are necessarily removed from the realm of coincidence. Flagg, in *Dental Cosmos*, 1878, records cases where neuralgias, painful functional disturbances of the eye and ear, etc., have been relieved by removing teeth. Infection was not recognized as it is modern-

ly, but undoubtedly was the primary cause of the trouble.

An arthritic shoulder appears, patient otherwise robust, well and strong, a chronic apical dental abscess discovered and removed, pain gradually disappears. Case after case could be recorded,—unscientific, coincidence, but facts. Discharge from apical abscesses and pyorrhea pockets entering the throat, infecting the tonsils are more common than realized, cases of tonsillitis clearing up after removal of the primary cause in the teeth.

Headache, skin lesions, sciatica, mental depression and on and on have coincidentally yielded to dental treatment.

The failures are due to over enthusiasm for the cause, faulty diagnosis, and last but not least, the transfer of a primary infection to secondary lesion, thereby changing it to a primary in itself, before the dental focus was removed.

All disease is not due to focal infection in and about the teeth, but many rheumatic group lesions are produced by focal infection. Focal infection about the teeth is apparently unavoidable, therefore in making a diagnosis, do not overlook this possible source of poison in the blood and tissues.

UROLOGY

A. J. CROWELL, M.D., *Editor*
Charlotte

For Conservative Kidney Surgery

Dr. Arthur L. Chute, in his Presidential address before the Genito-Urinary Surgeons Association, which met in Washington, May 4th and 5th, sounded a note of warning against radicalism in kidney surgery, which I feel was quite timely indeed.

He said quick results seem to have become a fad and very frequently the ultimate results are not sufficiently considered. We agree with him in the assertion that conservation of kidney tissue is of vital importance, and especially in diseased conditions where recurrence is likely. He feels we should be especially conservative in cases of lithia-

sis, since recurrence is likely. When the stone is small and not accompanied with infection, he advises against any operative procedure, and especially if the stone is producing no special pain. He emphasized the importance of nephrectomy at the earliest moment possible in hypernephroma or any malignant condition of the kidney. He also advocates the removal of a tuberculous kidney when we have every assurance that the opposite one is free from tuberculosis, and certainly if no tuberculous foci are found elsewhere in the body. He thinks no one should hesitate to remove a kidney which had been practically destroyed by infection, but protests against the removal of an acutely infected kidney, certainly when both are involved. The idea which once prevailed that, if both kidneys were acutely infected, the removal of one would bring about resolution or restoration to normal of the opposite one, he thought was fallacious and that this should never be done. Time and proper treatment is usually sufficient to perfect a cure in such cases. He cited a number of instances in his own practice in which nephrectomies were done for no other definite pathology than the presence of stone, these patients afterwards returning with stone, or stone and infection, in the remaining kidney. He said their condition was infinitely worse than when they first fell into his hands. He reported having witnessed the same occurrence in the practice of others. I am sure every one who has done a great amount of kidney surgery has had the same experience.

I agree with Dr. Chute that if we amputate a limb we can replace it with an artificial one, but, if we remove a kidney, replacement is impossible, and we should be certain that nephrectomy is definitely indicated before taking such a step. With our present knowledge and instruments of precision, such as the cystoscope, ureteral catheters, x-ray, and means of testing the kidneys' function at our command, there is no excuse for the removal of a kidney without definite indications. Conditions indicating nephrectomy are not sufficiently urgent to justify one in doing this

operation without first having taken advantage of these agencies.

SURGERY

A. E. BAKER, SR., M.D., *Editor*
Charleston

The Relative Merits of the Various Treatments of Peptic Ulcer

The following is an abstract of a good paper by Donald C. Balfour, M.D.:

Of all diseases within the abdomen, peptic ulcer stands first in the number and variety of treatments which have been suggested for its cure. While many of the methods have been abandoned, there remain a sufficient number of those possessing real merit to create some uncertainty as to their indications. Yet it is on a knowledge of the value of those different methods, and of their correct application, that the best results in the treatment of chronic peptic ulcer depend.

In considering the merits of any treatment for peptic ulcer, it is essential that the very marked distinctions between gastric and duodenal ulcer be kept clearly in mind. The indications for medical treatment depend largely on the situation of the lesion. In chronic gastric ulcer prolonged medical treatment is justified only when surgery is absolutely contraindicated because of the age or condition of the patient. The more familiar we become with the uninterrupted course of chronic gastric ulcer, which is one of progressive disability, the more certain we become of the fact that prolonged medical treatment is never justified if the patient is fit for operation.

In cases of chronic duodenal ulcer such serious objections to medical treatment do not exist, since the symptoms are usually not so severe, the disability so great, nor the danger of fatal complications so marked as in cases of gastric ulcer. Medical treatment of chronic duodenal ulcer is, therefore, not uncommon, but the absence of reliable data concerning the late results of such treatment suggests that the results are not so satisfactory as might be wished.

Undoubtedly certain patients are relieved of the symptoms of ulcer under medical treatment, and since postmortem evidence shows that ulcers may heal spontaneously, most surgeons agree that one thorough course of medical treatment of uncomplicated duodenal ulcer is justifiable before surgical intervention is advised.

The groups of patients with duodenal ulcer who may be treated medically are: (1) patients under twenty-five years of age; (2) patients with mild symptoms of short duration; (3) patients in whom ulcer is found incidentally (in roentgenologic examinations); and (4) patients whose general condition because of age, or because of other disease, makes operation a greater menace than the ulcer.

Of the surgical procedures at our disposal, each has its merits, the essential point being the selection of the best method in the individual case. Just as it is necessary in discussing the medical treatment of peptic ulcer to distinguish clearly between gastric and duodenal ulcer, so in the surgical treatment it is equally important to realize that gastric and duodenal ulcers are two distinct entities. It is generally recognized that the fundamental principles in the successful treatment of chronic gastric ulcer is the removal of the ulcer, whenever feasible. The method of removal varies with the size and situation of the ulcer.

In the surgical treatment of chronic duodenal ulcer, one fact stands out: that no one operation, even when well suited to the individual case, will give perfect results. Because of this fact, surgeons have sought, by constant effort, to improve the results by the modification of old methods, or the introduction of new. Many of these have not withstood the test of time, but there are at present four surgical procedures for chronic duodenal ulcer which should be considered: (1) Gastro-enterostomy, with or without excision of ulcer; (2) pyloroplasty or gastroduodenostomy, with or without excision; (3) excision alone, and (4) partial gastrectomy.

The merits of gastro-enterostomy for chronic duodenal ulcer can be judged by

its long-standing popularity. It was on the results of this operation that the surgical treatment of peptic ulcer became firmly established. He recently reviewed 1,000 cases of chronic duodenal ulcer in which gastro-enterostomy had been performed more than ten years before, and found that 88 per cent of the patients reported satisfactory relief from their ulcer symptoms. The operation is safe, the mortality rate being between 1 and 2 per cent; it is usually simple, and it can often be done when any other procedure is definitely contraindicated.

Pyloroplasty is at times a useful substitute for gastroenterostomy. The chief merit is that it permits inspection of the mucosa of the duodenum and pyloric end of the stomach for multiple ulcers, etc.

LABORATORIES

HARVEY P. BARRET, M.D., *Editor*
Charlotte

Tests for Bile Pigment in the Blood

A number of tests for bile pigment (bilirubin) in the blood have been described. Normally, there is present a very small quantity of bilirubin in the blood serum. The amount is so small that it can be detected only by very delicate tests. A test to be of value should not be so sensitive as to show the normal bilirubin content, but should be delicate enough to show bilirubin before it is present in quantities sufficient to give a positive urine test. Friedman (Medical Clinics of North America, Sept., 1923) has shown the value of testing the blood for bilirubin in cases of latent jaundice. By latent jaundice is meant a condition in which bilirubin is present in the blood in pathologic amount but not in quantities sufficient for the pigment to be deposited in the skin or to be excreted in the urine. Fouchet's test is the best for this purpose. Fouchet's reagent is composed of trichloroacetic acid five parts, ten per cent ferric chloride 2 parts, distilled water 20 parts. This test will give a

positive reaction for bilirubin in dilutions as high as 1-60,000.

To perform the test the patient's blood is withdrawn from a vein, as for a Wassermann reaction, the serum is separated and one drop of the serum placed on a glass slide and one drop of Fouchet's reagent is added. It is best to place the slide on a white background. If the reagent is placed in the center of the drop of serum a white coagulum is immediately formed with clear serum surrounding it. This white color changes to green, the depth of

color depending on the amount of bilirubin present. It is best to wait five minutes before making the final reading.

This test has been found of value in aiding the diagnosis of many conditions affecting the bile-forming organs. It is positive in early catarrhal jaundice, hemolytic jaundice, pernicious anemia, gall stones and acute and chronic gall-bladder disease. It should be used more extensively as an aid to diagnosis of such conditions.

NEWS ITEMS

Meeting Cumberland County Medical Society.

At the meeting of the Cumberland County Medical Society held on the evening of June 9, Drs. W. Lowndes Peple, and Jas. K. Hall, of Richmond, President and Secretary, respectively, of the Tri-State Medical Association of the Carolinas and Virginia, and Dr. Jas. M. Northington of Charlotte, were guests.

Participation in a barbecue given by Dr. J. Vance McGougan at his farm in honor of Major-Gen. Douglas McArthur was a pleasant preliminary.

Dr. Peple presented an instructive paper on "Adhesions," and Dr. Hall dealt in his inimitable way with "Repressions." Dr. Northington discussed briefly some of the phases of medical journalism in the State.

Later there was an enthusiastic discussion of plans for the meeting of the Tri-State in Fayetteville in Feb., 1926. The Secretary of the Tri-State Association expressed the confident hope that all the members of the Cumberland County Society, and most of the doctors of Eastern Carolina, would become members of the Tri-State and be present at the next meeting. The ready co-operation of the members present was assured.

Dr. H. H. Bass, of Henderson, N. C., is closing his hospital and moving to Philadelphia to form a partnership with

Dr. W. L. Clark. Dr. Bass will leave for Philadelphia June 16th, and his hospital will be closed July 1st. Information concerning the reopening of the hospital will be published in this journal when it is obtained.

Dr. A. A. Barron, one of the leading internists of Charlotte, was one of the physicians to address the 69 members of the Greenville County Medical Society at the annual banquet of the society. The other principal speaker of the occasion was Dr. Stewart R. Roberts, of Atlanta, Ga., president of the Southern Medical Society.

Dr. Barron's subject was "Some Considerations of Brain Tumors With Case Reports."

Dr. Exton Succeeds Dr. Sondern

With the closing of this year's session of the American Society of Clinical Pathologists the honor of selection as president-elect was conferred on Dr. William G. Exton, director of the Prudential Insurance Company's Longevity Service and Laboratory. Dr. Exton was one of the speakers before the convention, which was held in Philadelphia, dealing with the development of a new instrument, the scopometer, devised in the Prudential urinalysis laboratories for the measurement of the turbidity or cloudiness of body fluids.

As President-elect of the society, Dr.

Exton will assume office next year, succeeding Dr. Frederick E. Sondern, of New York, former president of the New York Post Graduate Medical College.

Dr. Exton was graduated from the College of Physicians & Surgeons, Columbia University, in 1896 and subsequently took post graduate courses in Europe. He has been connected with the Prudential since 1914. Prior to that he was in private practice in New York City, specializing in urology. As head of the Prudential laboratory and longevity service he developed its technic for accuracy and rapidity of urinalysis to meet the demands of between 50,000

and 60,000 policyholders a year. It was in this connection that he devised the scopometer and euscope, also and apparatus for determining accurately the specific gravity of small specimens. He also perfected a rapid quantitative test for albumin.

The Longevity Service directed by him works in conjunction with the family or personal physicians of the policyholders who are found to require attention.

Dr. Tom A. Williams has returned to Washington after wintering in Florida.

MISCELLANY

Tetanus Not Hopeless

While prevention is, beyond all question, better than cure, and has long been considered the only hope in cases of tetanus, a change is coming over the medical mind in respect to the value of antitoxin after the symptoms of tetanus have made their appearance. No longer regarded as useless, the urge is to make the dose adequate, 10,000 to 20,000 units at least, and in the vein or the spinal cord. Some striking cures have been reported from these large doses, followed up by smaller daily hypodermic injections to maintain the antitoxic effect.

Tetanus Antitoxin, P. D. & Co., is recognized everywhere as a standard product, and is available in doses ranging from 1500 units (for prophylaxis) to 10,000.

Literature on Tetanus Antitoxin and on Chloretone (chlorbutanol), a chemical compound that is given in large doses per rectum to control the muscular spasms of tetanus while the Antitoxin is given for its specific effect, is offered by Parke, Davis & Co., whose advertisement appears elsewhere in this issue.

shown by the fact that the sale of shields and other contrivances for the protection of the vaccination area has decreased very much of late. An appreciable number, however, are still being sold. A recent report from the United States Public Health Service indicates that the attention of physicians should again be called to the danger of such dressings.

Three dangers must be avoided in choosing a safe dressing for the vaccination area; i. e., (a) contaminated materials, (b) constriction, (c) retention of moisture.

That dangerous contamination may lurk in unsuspected materials is shown by the above mentioned report from the United States Public Health Service. Several cases of post-vaccination tetanus have been found to be directly attributable to the use of "bunion pads" as vaccination dressings. Unused pads obtained from the same source were examined in the Laboratory and were found to be contaminated with tetanus spores. The use of bunion pads as vaccination dressings is apparently fairly common, and is one of the most dangerous methods of dressing a vaccination area.

Dangerous and odd dressings are not infrequently applied to the vaccination area. Among one race, we have found

Do Not Use a Shield or a Bandage

That this warning is being heeded is

it to be a common practice to apply a vegetable leaf, presumably because of its cooling qualities. In view of the fact that the tetanus bacillus has its normal habitat in the intestinal tract of domestic herbivora, the danger of such a dressing, grown on manured soil, is obvious. These facts show the importance of advising each patient as to the proper method of dressing the vaccination area.

In applying a dressing to a vaccination area, due regard must be paid to the fact that if there is a "take" there will be inflammatory swelling with stretching of the overlying skin. Any dressing which brings bandages, strings or adhesive of any description within the inflammatory area is to be unreservedly condemned. Constriction of the tissues will reduce the blood and the lymph flow, thus resulting in an interference with cell function and in a consequent reduction of local resistance to bacterial infection.

The retention of moisture by any form of dressing, caused especially by the use of celluloid or other impervious coverings, also favors the growth of the bacteria. When moisture and constriction are added to the increased heat coincident to a "normal" take, the conditions prevailing then are those considered to be almost ideal for bacterial multiplication.

We appreciate that the physician himself is rarely at fault as regards the application of unsuitable dressings. Physicians, however, should insist upon the right of follow-up care of all their vaccination cases.

The following are essential safeguards in vaccination: (1) a correct form of dressing, (2) clear and emphatic instructions to each patient as to the protection of the vaccination from contamination by soil, manurial dirt, street dirt or dressings containing products of animal origin, (3) prompt surgical treatment, as in the case of any infected wound, should infection develop, (4) follow-up of every case of vaccination.

Honorable John F. Hylan, the Mayor of New York City, in submitting to vaccination, has demonstrated his appre-

ciation of the value of vaccination and has set an example to all citizens. The vaccination was performed by Commissioner Frank J. Monaghan, M.D., aided by his assistant, John Oberwager, M.D.

The Commissioner of Health applied to the Board of Estimate for \$80,000 to be used to prevent the invasion of smallpox in the city. The Board voted the appropriation after the Commissioner summed up his arguments in the following words:

"I would rather adopt proper measures to protect the city against the possible invasion and the spread of smallpox, and face the unwarranted criticism of those uninformed on public health subjects, than shoulder the responsibility and the charge that I failed to apply the lessons of preventive medicine."

Medical Superstitions

Are you afraid to look at a new moon through the trees, believing that it will bring bad luck? Probably not.

Have you superstitions about black cats or gray horses? Maybe, but you know they have no basis in fact.

Do you believe that if you kill a toad the family cow will go dry? Undoubtedly not.

And yet you may be one of the thousands who still believe in the old saying that one should "stuff a cold and starve a fever", even though medical science has proved that the opposite is the case.

"Medical superstitions and saws, even when ridiculous on the face, die harder than any others," says Dr. J. Allen Patton, medical director of the Prudential Insurance Company of Newark, N. J. "A man who wouldn't think of carrying a buckeye in his pocket as a charm, or the left hind foot of a grave-yard rabbit, will insist that his wife tie a piece of asafoetida on a string around the baby's neck to keep it from catching whooping cough or other contagious diseases. If it were possible to enumerate the children in the United States today who are wearing these pendants about their necks the large number would be a strange and striking com-

mentary on the medical superstitions of our people.

"The same is true of red flannel underwear," says Dr. Patton. "Despite the fact that it has become the subject of jest nationally it is still widely worn, because it has long been the belief that red flannel would keep off lumbago, rheumatism, pneumonia and the like. As a matter of fact flannel as an undergarment has its value in that it is an effective means of keeping the body warm, but red flannel has no more virtue than white, or powder blue, if flannel were made in the newer shades, except that red flannel enables the watchful mother to detect with a rapid glance whether her offspring has changed to summer cottons prematurely and without orders.

"It is a surprising thing, but in certain sections it is generally believed that tuberculosis can be cured with Indian turnips soaked in whiskey. In which instance the wish may be father to the thought, but it is nevertheless erroneous. Yet these people would probably not be unduly alarmed to hear the hootings of the screech owl nearby, long an accepted omen of ill fortune.

"Belief in ancient sayings, so far as the science of medicine is concerned, is as bad as self-diagnosis," says Dr. Patton. "Both are to be deplored. There are enough competent physicians in the country now to supply expert advice to all those who seek it, so that it is no longer necessary to swathe one's self in red flannel, or to reek with unpleasant odors as a preventive of disease."

REVIEW OF RECENT BOOKS

AN AFRICAN HOLIDAY by Richard L. Sutton, M.D., LL.D. Fellow of the Royal Geographical Society of Great Britain. With 102 Original Illustrations. St. Louis. The C. V. Mosby Company, 1924.

Few doctors are masters of expression; more's the pity! But Dr. Sutton is one of the few. From beginning to end this little volume is a treat. He gives a wide age range for those who may safely undertake an African shooting trip, to wit; "sixteen to sixty-five." His account of his experiences on his trip across France prepare one to revel in his encounters with guides and game.

His ungrudging tribute to the bravery, honesty and fidelity of the three gun-bearers is pleasing to us Southerners who know the negro to be the most affectionate and faithful of mankind; the one of all the race who will repay kindness most abundantly, and prove least often recreant to a trust.

It is entertaining to learn that each Wakamba has two front teeth extracted ever since an epidemic of tetanus of years ago necessitated this operation for purposes of feeding.

DIET IN HEALTH AND DISEASE by Julius Friedenwald, M.D. Professor of Gastro-Enterology in the University of Maryland School of Medicine, Baltimore, and John Ruhrah, M.D., Professor of Diseases of Children in the University of Maryland School of Medicine, Baltimore. "These few rules of diet he that keeps, shall surely find great ease and speedy remedy by it."—Burton. Sixth Edition. Thoroughly revised. Phila-

delphia and London. W. B. Saunders Company, 1925.

There is a brief discussion of digestion and absorption as a necessary preliminary and a table (from Hawk) classifying the enzymes. A few paragraphs are devoted to the peculiarities of digestion in infants. The planning of diets for persons under many different conditions is given much space. Condiments are condemned only in some gastric and renal diseases. "Certain mineral waters are now known to contain traces of radium, and some of the therapeutic effects of these waters have been attributed to this radio-activity." The reviewer can only quote from an older book, "I have not found so great faith; no, not in Israel."

Tea is said not to be suitable for persons with gastric disturbances. Coffee also has some tendency to disturb digestion. Some things are said of alcohol which fall on the ear with a convincing force. "The effect of alcohol on the nervous system varies greatly in different races, in different individuals, and under different circumstances." If one is to get any real understanding of the alcohol problem he must start from this postulate; but how few of our self-constituted teachers on the subject have a glimmer of it!

Special diets for individual diseases are prescribed with due insistence on the peculiar features of the individual case and patient. Conjectural things are not set down as proved facts. The vitamins are discussed as necessary food materials of unknown composition. There are chapters on Army and Navy rations, prison and hospital dietaries, so no matter

where we are sent, provision is made that we shall be scientifically fed.

Monographs on Experimental Biology

CHEMICAL DYNAMICS OF LIFE PHAENOMENA by Prof. Otto Meyerhof Keil.

Philadelphia and London. J. P. Lippincott Company.

This volume contains five lectures delivered by Professor Meyerhof at the Rockefeller Institute. Cell respiration, autoxidations in the cell, chemical relations between respiration and fermentation and the transformation of energy in muscle make four of the subjects. While these lectures are of more especial interest to physiologists and biologists, they deal with matters of fundamental importance to the medical man who would have an understanding of these vital processes.

MATERNITY NURSING IN A NUTSHELL

by Elizabeth H. Wickham, R.N. Graduate of the Boston City Hospital, and Boston Lying-in Hospital Training School for Nurses; Former Supervisor of the Maternity Department, Lebanon Hospital, New York City; also Late Field Nurse, Maternity Center Association, New York City. With 28 Illustrations. Philadelphia. F. A. Davis Company, Publishers, 1924.

Written by a nurse from her own experience and after an engaging style, this little book cannot fail to please and instruct. The essentials of pelvimentry, prenatal care, complications of pregnancy, preparation for delivery in the home, the nurse's delivery and after care of both mother and baby are given. There is a chapter on twilight sleep and a glossary.

Blakiston's Compendis. A COMPEND OF

GYNECOLOGY by William Hughes Wells, M.D. Late Assistant Professor of Obstetrics in the Jefferson Medical College; Assistant Obstetrician in the Maternity Dept. of the Jefferson Medical College Hospital; etc. Fifth Edition, Revised and Enlarged by William Bensor Harer, M.D. Instructor in Obstetrics in the University of Pennsylvania, Assistant in Gynecology and Obstetrics in the Howard Hospital, Assistant Visiting Physician in the Philadelphia Lying-in Charity Hospital. With 167 Illustrations. Philadelphia, P. Blakiston's Son & Co.

It does not seem a waste of space, even in a compend, to advise that the patient be allowed to "tell the story of her complaint in her own words, as long as she confines herself to the subject." Minute directions for preparing the patient for examination in home or office are given.

There is a special section on Operative Gynecology in which the most modern accepted methods of operative treatment are described.

PERSONAL HYGIENE APPLIED by Jesse Feiring Williams, A.B., M.D. Professor of Physical Education, Teachers College, Co-

lumbia University. Second Edition, Revised. Philadelphia and London. W. B. Saunders Company, 1925.

It is stated that "The aim of this book is to improve the quality of human life." If it succeed, even in the smallest degree, surely it will have well justified itself. The author well emphasizes the vast difference between being in health and being merely not ill. Much evidence is adduced to show that man can and should develop and preserve his powers at their highest points of usefulness to himself, his family and the race. Eddyism, chiropractic and osteopathy are touched on in a few illuminating sentences. The hygiene of the different systems of the body is discussed in detail and there is a chapter treating of the prevention of specific diseases. The book is written to be read by laymen, technical terms, when used, being defined. If it could be placed in the hands of every patient, and the patient induced to read it, the task of the honest doctor would be greatly reduced and intelligent health work greatly facilitated.

DISEASES OF CHILDREN for Nurses Including Pediatric Nursing, Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, and Hygiene by Robert S. McCombs, M.D. Formerly Physician to the Out-patient Department of the Children's Hospital of Philadelphia, and Associate in Medicine at the Philadelphia Polyclinic Hospital; Instructor of Nurses at the Children's Hospital of Philadelphia; Colonel Med. O. R. C., U. S. Army. Fifth Edition, thoroughly revised. Philadelphia and London. W. B. Saunders Company, 1925.

The plan of the work is to give the outstanding symptoms which a nurse should recognize and the complications against which she should guard. The first chapter deals with the peculiarities of diseases in the child and chronicles the developmental changes incident to normal growth. Extracts from the Pennsylvania laws as to segregation of the sick are given. The second chapter treats of the problems which confront the nurse who has charge of a sick child as regards the treatment of the condition in its broadest sense, including amusement and entertainment; and contains some such practical instructions as "Never leave a child alone in a tub" and "Do not tuck the bed-clothing in too tightly."

The importance of diseases of the throat and ear, and of the early treatment of malformations are stressed. Under therapeutics the symptoms and signs which indicate that the limit of tolerance of many commonly used drugs are enumerated in a helpful table.

THE RELATIVE POSITION OF REST OF THE EYES AND THE PROLONGED OCCLUSION TEST, by F. W. Marlow, M.D., M.R.C.S., Eng., F.A.C.S. Professor of Ophthalmology in the College of Medicine, Syracuse University; Member of the Ameri-

can Ophthalmological Society, and of the Ophthalmological Society of the United Kingdom; Fellow of the Royal Society of Medicine, etc.

Illustrated with Original Diagrams and Charts. Philadelphia. F. A. Davis Company, Publishers.

There is nothing new in what Dr. Marlow has to say on this subject of eye strain giving rise to annoying symptoms on the part of a certain class of patients suffering from an improper ocular muscle balance. However he has with clearness made a valuable contribution of his personal records of (700) seven hundred or more cases from his practice, with results and treatment. The question of ocular muscle balance is one of the most difficult problems in medicine. First the question to be decided is whether the patient needs an oculist or a wise medical adviser, for often it is the result of poor reserve nerve power and ill health manifested in an imbalance of the Extrinsic eye group of muscles. The ability with drugs to temporarily paralyze the intrinsic eye muscles, has for many years given the oculist a means of accurately finding and correcting refractive errors such as Hyperopia, Myopia, and Astigmatism. Dr. Marlow shows in his series of cases that without an exception when the correction of the refractive error does not relieve the eye symptoms, or in certain cases increasing the trouble, there is always a muscular imbalance, which may not be manifested except when the occlusion of one eye is complete. He feels that what a cyclopegic is in relaxing accommodation and making manifest a latent refractive error, occlusion of one eye is to developing latent trouble of the extrinsic eye muscles, such as Exophoria, Hyperphoria, etc. His method is by using either a patch or an opaque lens. His treatment is either exercise with or without prisms.

Second. The constant wearing of prisms.

Third. Surgery by tenotomy, etc.

The length of time of the occlusion is a week or more. And as in surgical technique must be complete.

John Hill Tucker, M.D.,
309 Professional Bldg.,
Charlotte.

Medical Society of the State of North Carolina

Seventy-third Annual Session, April 20,
21, 22, Wilmington

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SOME CONSIDERATIONS ON THE DOCTRINE OF FOCAL INFECTION*

HIRAM WOODS, M.D., Baltimore

Mr. President and Members of the Medical Society of the State of North Carolina:

During the years I tried to teach Ophthalmology at the University of Maryland, I met men from your state as students, and later retained them as friends. Through them, I formed friendships with other members of your State profession, so I do not feel that I am coming among strangers. I beg to thank you all for your kind invitation and I trust that the subject upon which Dr. Sloan has asked me to speak may be of interest.

Probably I should have chosen another had the choice been left to me. However, I have studied the attractive doctrine of focal infection in practice, seen apparent successes and absolute failures, and, like many others, have tried to learn the basis upon which it rests. It is from this standpoint I shall speak, rather than narrative cases. Soon after the doctrine of focal infection, as it is called, was offered, ophthalmologists took up its study. One of the impelling motives was a desire to reduce the number of cases to which had been applied the term "idiopathic," meaning "unknown." As I recall the classification of certain intra-ocular diseases taught years ago, causative factors were syphilis, tuberculosis, rheumatism and idiopathy. Better methods of diagnosis now enable us to classify many cases (previously termed idiopathic) as luetic or tubercular. Rheu-

matism has been dethroned as a primary cause and has taken its place, with eye lesions themselves, as an incidental or secondary result. All this has reduced the number of idiopathic cases and opened the way for rational treatment. We must study focal infection in the same way, i. e., as the producer of an ocular lesion, functional derangement or pain, etc.—the provocative influence emanating from a distant, chronic, focal infection. These foci are usually very small (as in dental infection) but capable of causing distressing or serious distant troubles.

The pathologist has shown that cultures of material taken from infected teeth, when injected into animals, can produce multiple lesions, among them ocular inflammation. Whether these latter reactions are ever specific for the eye or merely a part of the general infection, is uncertain. I confess to a feeling that clinical ophthalmologists are afflicted with a tendency to mistake associations for causes. Take for instance the multitude of reports a few years ago, of which I made several, claiming that intestinal stasis leading to intestinal autointoxication produced ocular lesions. No one can say they do not, but it has never been proved nor its pathology explained. The same thing is true today of the endocrine glands. As a cause of ocular disease these structures have their supporters, but on the other hand, most men are content to acknowledge that they know very little about it. It is to be feared that the same error pervades the present enthusiasm for focal infections. There is a difference in the method of procedure of

*Prepared for the meeting of the Medical Society of the State of North Carolina, Pinehurst, April, 1925.

the pathologist and the clinician. The former starts from a primary infectious focus and reasons toward the metastasis. The clinician finds an eye lesion in a human being and tries to work back to the primary infection from which the metastasis may have developed. In other words, the pathologist begins with a definite infection and the clinician begins with a supposed metastasis. It is this condition that has led me to avoid a strictly eye approach and to present the subject from a broader viewpoint,—what we know or can find out about the processes underlying clinical observations.

While I was trying to arrange some of the principles which are generally thought to underlie the focal infection doctrine I received from my friend, Dr. George E. deSchweinitz, a copy of the address he delivered in Paris at the reception given him last year by La Société Française D'Ophthalmologie. His subject was "Concerning Certain Ocular Manifestations of Infectious Foci to the Exclusion of Those Which Are Commonly Attributed to this Etiologic Factor." The "exclusion" consists of omitting uveal lesions and reporting two wonderfully striking cases, one of senile alterations in the macula; the other, axial neuritis, (retrobulbar neuritis) apparently traced to focal infections. But is it not the cases which lead me to make extensive quotations from his paper. I quote that part of his address in which he presents the basic principles, as he views them. To date, they are the last word, so to speak. They do not clear up all mooted points; on the contrary, they carefully warn against quick conclusions and unrestrained enthusiasms.

"1. Metastatic and often recurrent infections may result from chronic focal infections and their removal (i. e., the focal infection) is frequently, but not invariably, followed by disappearance of the metastatic lesions and of the recurrences.

"2. It is assumed that bacteria cause the primary lesions, although it has not been possible thus far to demonstrate a

complete mechanism for each organism.*

"3. Animal experimentation has demonstrated that cultures from an infected area (focal infection) injected intravenously *may* produce a metastatic inflammation, a culture from which in its turn injected into the veins of other animals will create an identical lesion, the evidence in this respect being especially clear in abscessed teeth and iritis (Rosenow, Benedict, E. V. L. Brown, Irons, Park Lewis and others). But naturally the entrance of microorganisms into the blood stream does not imply that metastatic lesions *will* arise, because the bacteria may be destroyed in the blood stream, but only that they *may* become active in the production of such lesions *if resistance to infection is depressed*. (The italics are mine. H. W.)

"4. The selective tissue affinity of certain bacteria, i. e., elective localization, is a theory which rests in the opinion of many expert bacteriologists, upon a satisfactory foundation, and may thus be stated: A focal infection being present, bacteria may find favorable opportunities for growth, multiplication and entrance into the lymphatic stream, not only by means of ulceration, but possibly by being carried in by migratory leukocytes acting as phagocytes. Having gained access to the bloodstream, they may be able to withstand the bactericidal action of the bloodstream by reason of the reduction in the resistance of the blood due to the primary infection. Subsequently they may locate in certain tissues, for instance ocular tissue, either because they have developed a special affinity for these parts and find conditions favorable for their growth, or because the re-

*E. V. L. Brown has succinctly thus stated the facts in question: Bacteremia has necessarily been only assumed in many cases, and yet bacteria should be demonstrable in the blood-stream if the evidence in the case shall be unquestioned. This unassailable evidence is difficult, perhaps impossible, to obtain, because only a few organisms are present in the blood at a given time; if it were otherwise a condition of sepsis would develop.

sistance of these parts is reduced by some other agency and thereby favors the localization of the germ.*

"5. Bacteria coming from the primary lesion (focal infection) which is suppurative, may cause a non-suppurative metastatic inflammation because in their contact with the blood serum their virulence is decreased; they may be found in the environment of the affected lesion (for example, staphylococcus, etc., in the aqueous humor in focal iritis); or in the substance of inflamed tissue (for instance, streptococci in the iris (Rosenow, Brown, Irons, Nadler); or they may be absent, having been destroyed by the virulence of the inflammation which they have produced by circulating bacterial toxins instead of the bacterial element itself is still in controversy. Although no one has proved that circulating bacterial toxins do not exist, which may find tissue elements for which they possess a specific combining affinity, it is highly probable, in

*The agency which reduces resistance in these circumstances may be regarded as an injury, which puts out of operation local protective forces, and this injury may be chemical, physical or depend upon a chronic infection. The subject of a remnant of gonorrhea in the posterior urethra (it may be years after its incidence) acquires and arthritis after prolonged walking, or an iritis after excessive reading. This is an example of a physical injury, which neutralizes the protective forces of the part involved. A person with chronic syphilis, or other chronic infection, may beget, for instance, a uveitis, which resisting the usual remedies yields to them after the elimination of focal infection (an abscessed tooth or septic tonsil, etc.) This is an example of the cooperative effect of a luetic or other chronic malady and secondary (pyogenic) infection; or, gout, diabetes or hypothyroidism, and an area of chronic (focal) infection may coexist. An ocular inflammation ensues because the disordered metabolic products furnish a chemical injury which reduces the resistance in an area against which the bacteria from a focal infection launch a successful attack.

E. C. Rosenow's theory that bacteria have a specific tendency to localize in certain tissues of the body, dependent upon some peculiar inherent property, is not accepted by many bacteriologists, most of whom failed to verify his results. Haden thinks failures in this respect are due to the fact that few of them have given sufficient attention to the fundamental technical details,

most circumstances, that in bacterial infections the germs themselves are present rather than their products as toxins and endotoxins, produced in a distant focus.

"6. The elimination of one focus of infection does not imply that the source of the metastatic inflammation has been removed; the foci may be multiple. A recurrence of the inflammation may be due to a bacterial invasion from an area of infection not previously discovered.*

"7. After removal of a local infection, the improvement in the metastatic infection, presumably due to it, may be *slowly* progressive, or it may take place *rapidly*, and in a few hours the whole process may disappear, moreover, permanently. Such rapid results are probably similar to those which occasionally follow intravenous injections of foreign proteins, and, like them, are probably non-specific (Irons).

"8. Many varieties of pathogenic bacteria have been accused with respect to the ocular effects of focal infection—the staphylococcus, the streptococcus, the pneumococcus, the colon bacillus, and the streptococcus viridans, etc., and it is possible that future investigations shall establish a definite relationship of certain bacteria, or bacterial strains, to definite lesions, for instance: the streptococcus viridans of dental sepsis to one variety of focal iritis.

"9. Local or focal infections may be found in various structures of the body. Common situations being well known, are the teeth, the tonsils, the paranasal sinuses, the intestines, the posterior urethra and prostate, the seminal vesi-

*Or bearing in mind the well-known fact that the local introduction of foreign protein into living tissue gives rise to local sensitiveness to such foreign protein, Brown Pusy suggests the following explanation of the relapse: In the first attack there is an actual embolic deposit of bacteria. The reaction to these runs its course, leaving the locality sensitive to the protein of the embolic bacteria. Subsequent infection (and the locality would be of no importance) with such bacteria would introduce their specific protein into the organism, where, being absorbed, this would cause recurrences in the sensitized area.

cles and the pelvic organs in women; less common ones are the gall-bladder, the appendix and the skin, (boils, etc.), but it is impossible to define the favorite port from which the invading bacteria enter the blood stream.*

"10. It is possible, even probable, that in certain circumstances a chronic local infection may be responsible, not directly for a metastatic inflammation, but for a disorder (sclerosis, endovascularitis) of the small-vessel supply of a defined area of tissue which in turn determines degeneration of the part thus deprived of its nutritive supply. It is difficult to escape the conviction that in these circumstances the circulation of toxins may be active.

"11. Removal of one area of focal infection, followed by improvement in, or cure of, a distant tissue-lesion, does not prove that chronic local infection was the source of the bacteria or toxin which caused metastasis; it may have been due to an undiscovered focus, or to another factor. It is clearly necessary to exercise balanced judgment and avoid indiscriminate accusation of focal infections, particularly as this relates to oral sepsis."

The underlying principles given in Dr. de Schweinitz's paper have been presented in full for two reasons: first—they seem to me to be the clearest and most easily understood statement with which I have met; and secondly—because they should be easily accessible, in English, to both clinician and pathologist.

There are several standpoints from which the clinical ophthalmologist may review these principles. The pathology of focal infection is anything but cer-

*In the tabulation of E. V. L. Brown, and E. E. Irons the tonsil is accorded the first place in two hundred most carefully investigated cases of iritis. But this simply proves, as the authors themselves observe, that in this particular series tonsillar infection predominated. Dental infections might readily exceed those from the tonsil in another series. Also these statistics refer only to iritis as an interpretation of focal infection, equally accurate and satisfactory statistics as to other ocular manifestations (of which there are many) of chronic local infection are not available.

tain. Mild general sepsis, bacteremia with local manifestations, selective tissue affinity for certain bacteria, toxines, presence of bacilli in metastases, recurrence in areas sensitized by previous infections; multiple foci, reactivity in old and quiet infections, provoked by a new pyogenic infection; "cooperative effects of an old chronic and new pyogenic infection," etc. And throughout constant reversion to reduced power of local protective forces. All these are suggested. None are uniformly accepted. When experimental studies have been given out with definite claims as to proof, other investigators have failed to confirm. They, in turn, have been told that their failure was due to faulty technique. Literature is full of such things. The clinician in either general or special practice, is forced back to the teachings of clinical experience. There is no such causal certainty as exists in the etiology of lues, malaria, diphtheria and other diseases. What clinical evidence is there of causative influence of focal infections producing metastatic eye troubles? Chiefly the existence of an ocular lesion, without evidence of the presence of one or more recognized causes, discovery of a focal infection and cure after its removal. Hundreds of such cases are on record, involving inflammatory and functional eye troubles. Or, in the presence of a known cause, usual remedies fail till a focal infection is removed. Again, the most painstaking search often reveals no focal infection or one is removed without benefit to the supposed metastasis. These experiences have doubtless happened to all of us. When they are studied together, we are forced to conclude that while the basal etiology of functional or inflammatory eye troubles cannot always be determined, a focal infection can reduce normal tissue resistance. Applying these conclusions to our apparent cures, are we not left in doubt as to completeness? Have we really removed a cause or merely gotten rid of something which was interfering with normal recuperative processes? Is the removal of a fo-

cal infection, after all, more than a therapeutic experiment? Here is where I feel we must leave the question. But even so, enough is known to force on us certain duties. Anything which can retard healing processes should be removed.

In conclusion, little more than mere mention of a few items, some of them already given:

1. An infectious focus may exist and yet show no local symptoms whatever. Many people have dead teeth and the roentgen rays, when finally used, show apical abscesses; but they are discovered only when, for some reason, a careful search is made for a possible hidden infection. The same is true of tonsillar and paranasal sinus conditions. I had a patient with cataract and, in the interest of clean surgery, put him through a thorough examination. A symptomless and unsuspected abscess of the right antrum was found. Of course, it would have been only courting trouble to have removed the cataract before draining this abscess. Oral pyorrhea stands in the same class, and I want to emphasize this clinical fact. Whatever be the explanation of metastasis from focal infection, *its possibility increases responsibility*. Freshly opened tissue, after operation, can take up infection which is would escape if undisturbed. Consequently, if it has to be disturbed, a possible source of focal infection must be eliminated.

2. Discovery of a possible focal infection in the presence of an ocular disease which may be a metastasis, does not prove etiologic relation. The only way to test this clinically, is to remove the focus and await results. Sometimes these are very prompt. I have seen iritis clear up in 48 hours after the extraction of an infected tooth, and other cases not helped at all.

3. Even when a focus has been found there is no certainty that there may not be others, and, possibly, the causative one, undiscovered. It is quite possible that all the removal of the infectious focus does is to relieve one handicap un-

der which Nature is laboring and thus aid tissue resistance. This is especially true in cases of admitted double infection. For instance, a luetic choroiditis may resist systemic treatment until a focal infection has been removed, be it dental, tonsillar, or what not, then the remedies employed to combat a known disease are effective.

4. Delay in the disappearance of a supposed metastasis after removal of an infectious focus does not prove that the latter has nothing to do with producing it. An example of this was in the case of a man who had, for years, recurrent episcleritis with secondary circumcorneal infection and corneal clouding. Every possible effort was made to find the cause. He also suffered from recurrent attacks of lumbago and sciatica. Finally, attention was drawn to some dental bridge work of which he was very proud. Roentgen rays examination indicated apical abscesses in the supporting teeth. With full knowledge of uncertainty, he finally consented to sacrifice this bridge work. Apparently there was no result, for his episcleral attacks and lumbago persisted for a year or more. Then little by little their severity subsided and now, for a long period of time, he has been free from both episcleritis and lumbago. The question also arises as to whether diet, rest, etc., had not been getting in *their* good work, too.

5. Sometimes we get a very disagreeable proof that the real focus has been found. The ocular lesion becomes suddenly worse after the removal of a supposed metastatic focus. Usually it is only temporary.

6. While I have discussed the subject only from the positive, there are some things to be considered on the negative side. It is a great mistake to jump at a conclusion. I have known good teeth to be extracted without the slightest benefit to an alleged metastasis; tonsils removed which were only slightly abnormal, if that, just because they were tonsils. Such things, I fear, are all too common. My own opinion of

the clinician's duty, when he discovers a focal infection associated with a supposed metastatic disease, is, that the infectious focus should be removed for its

own sake; but he must not look for cure of the supposed metastasis with enthusiastic confidence. Only time can determine this.

OBSCURE FEVERS*

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The few cases which I wish to discuss today are brought to your attention as curious instances of very prolonged fever without demonstrable cause. They are unsatisfactory in that they do not enrich our knowledge of etiology or the treatment of such cases. However, it is worth while reviewing even a limited experience with unexplained maladies because they focus our attention upon them and stimulate more careful observation in the future. The study of any problem must begin with a conception of the problem, and I report these cases today in the hope that others have had similar experiences and that our common study may help to illustrate these puzzling instances of prolonged fever without discoverable cause.

For the sake of brevity, only the positive features of these four cases will be given. The first case observed was a young married woman of twenty-five whose appendix was removed without any complication. The wound healed promptly and the operation was entirely successful. For the ensuing ten months, however, the patient has run a constant daily temperature of from 99.6 to 100, with pulse moderately accelerated. At the same time this patient has suffered constantly with nervous symptoms and has lost weight each month. Her nervousness has taken the form of restlessness, sleeplessness, great irritability and almost complete lack of appetite. She has complained from time to time of indefinite pain in the right lower quadrant of the abdomen. Vomiting has been a constant feature, the patient frequently losing

for days every meal eaten. It will be easily believed that every conceivable study has been made. Tuberculosis was early suspected and x-rays of the lungs together with frequent physical examinations have been made. The patient was seen by Dr. Hammon and Dr. Thayer of Baltimore, who repeated the lung examination, together with x-rays and tuberculin tests, with entirely negative results. I think tuberculosis can be excluded. Focal infections of every variety have been searched for. The teeth have been studied with the aid of x-rays; the tonsils and sinuses thoroughly investigated; the urine has been studied repeatedly and several blood cultures have been made. The results have been completely negative. During all these months, many of which were spent in bed at absolute rest under the care of a trained nurse, the temperature has persistently registered near the hundred mark.

The second case is that of a girl of seventeen, whose history is precisely the same as that just narrated, with the exception that she had no operation. She too ran for four months a persistent fever up to one hundred each afternoon, suffered from nervousness, vomited nearly all her meals and persistently lost weight. She has been subjected to the most detailed investigation, with the aid of x-rays, with completely negative results. The one positive physical finding has been a very moderate enlargement of the thyroid gland. This patient, too, has complained of indefinite abdominal pain for which no specific reason could be assigned.

The third instance of prolonged fever without adequate cause being demonstrated, was in a married woman of 22, who had an operation for appendicitis.

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This was a clean case that healed perfectly without complications. Following the operation her temperature remained elevated each day from 99.6 to 100 and she became very nervous and was troubled with nausea constantly. In this case, thorough examination of the blood, urine, lungs, and indeed every part of her body revealed no cause for the persistent fever. She was sent to her home in Georgia, and after two months became free of fever and apparently quite normal.

The fourth instance is a married woman of forty-one, who, following a rather severe attack of influenza, ran a persistent fever for five months. She too was extremely nervous, suffered daily with nausea and lost some twenty-five pounds in weight. Complete examinations from every standpoint failed to reveal any cause for the continued fever and other symptoms.

Thus briefly outlined you see four cases of fever persisting for months, together with great nervousness, nausea and vomiting without indigestion, and persistent loss of weight. The great similarity of these four cases has impressed me with the possibility that they had a similar origin in some obscure form of infection. One naturally thinks first of tuberculosis, but I believe this infection was ruled out as a possibility in these cases, both by the complete lack of positive evidence and the subsequent history. Three of these cases have recovered and the fourth has improved. In none of them was there any abnormality in the blood picture. The highest leukocyte count was 11,500. The intense nervousness, associated with nausea and vomiting, was a curious feature of all these cases. No reasonable explanation could be found for this. It is possible that the toxin of some low-grade infection was the ultimate cause of this and other symptoms. I wish to make the point strongly, however, that absolutely no positive evidence of such infection could be demonstrated.

It has been said that man lives not by bread alone but by a multitude of

catch-words. There is rarely a time when there are not such catch-words in active service in medicine. The most popular one at present seems to be "focal infection." It covers much and conceals more. On its sacred altar teeth and tonsils are heaped in huge piles. When the cause of pain, or fever, or indeed of any symptom, is obscure it has gotten to be the fashion to sacrifice a few teeth and the available supply of tonsils. The sacrifice has been enormously out of proportion to the good achieved. We frequently hear stated with all seriousness that tonsils which had never caused their owner any pain were found filled with pus, or badly abscessed, when removed. This is the most puerile form of foolishness, and is based on complete ignorance of the elementary principles of pathology. The pendulum is swinging back a little; we may expect more sanity in the future, and a less gullible view on the part of medical men when confronted with the catch-words, "focal infection."

It is always unsatisfactory to report unsolved problems, but these four cases have been briefly called to your attention because they are unsolved, obscure, and thoroughly unsatisfying. Such problems are daily presenting themselves in the practice of all of us. Is it not better to leave them honestly unsolved, after intelligent and industrious search for solutions, than to take refuge in some even less satisfactory catch-words?

SOME EXPERIENCES WITH GAS INSUFFLATION OF FALLOPIAN TUBES

Of ninety-four patients on whom 115 carbon dioxide insufflations of the tubes (Rubin test) were made by G. L. MOENCH, New York (*Journal A. M. A.*, June 13, 1925), up to four on the same patient, the result was that twenty-nine women were found to have closed tubes and sixty-five open tubes. Of the ninety-four patients, eighty-eight underwent insufflation more than three months ago; of these eighty-eight, thirty-three had closed tubes and fifty-five open tubes, and of the latter, seven later became pregnant. Not a single instance of pregnancy occurred in those patients who, according to tests, had closed tubes. Moench concludes that the carbon dioxide insufflation of the fallopian tubes is a valuable and safe test when properly carried out. The therapeutic value of the Rubin test is small, but real beyond a doubt, as shown by the fact that the tubes, after several carbon dioxide insufflations, often become more patent than before.

HANDICAPS DUE TO TEMPERAMENTAL VARIATIONS AND DISTURBANCES

Useful Civilian Lessons Taught By "War Shock," Shock Values, Coefficients or Their Variants, in the Arts, Industries or Professions

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The Captain of Scientific Industry seemed—till about the middle period of the war—impervious to consideration for individuals, based on variants in temperamental qualities as affecting office employees and operatives.

While his mind now may be permeable it is more than ever worth his while to get a fair idea of temperamental anomalies or peculiarities. If otherwise, he remains unfit to pass judgment on labor capabilities, and may commit injustices and economic blunders. These misfortunes may likewise affect himself or his immediate family. Rather than present this topic technically let me offer the story of shell shock as it has gradually emerged from fable to useful facts, giving pertinent hints for every-day guidance. This will serve to seize and direct attention to what might be regarded as an abstruse subject—which it is not. The outstanding points include constantly recurring incidents due to well known human peculiarities, vulnerabilities, capabilities, resistances and recoverabilities. It is the story of so-called "nervousness" or psychosis. Its solution is through the resources of common sense treatment.

The normal citizen (a very rare animal) is a blend of feelings, emotions, phantasies, caprices, impulses, likes, dislikes, courage, caution, longings, dreads, apprehensions, etc., offset by a little—just enough—reason or cool judgment to "get by." This moderate reason or intelligence acts as a defense mechanism against the hostilities of environment. It fluctuates, reaches up to a certain (varying) point and then spills over, in proportion as one has been well or ill endowed. Especially dubious is whether one has been well or ill trained, or

has trained one's self or personality. Individuals also vary widely in respect to their sensitiveness, whether it be more or less, the degrees of responsiveness to irritation, to stress, to shock; in short as to their shock value or index.

The two main avenues through which latent (potential) energies are made kinetic (put to work) in the mental domain, are: (1) reason, about ten per cent, and: (2) feelings, emotions, preferences for or against, about ninety per cent. Even the ten per cent in favor of reason is a trifle high.

These attributes, or qualities, are subject to conspicuous changes for better or worse. Fluctuations the result of experiences, habitudes, training, or wishful thought impulses, or cherished traditions.

Nevertheless sensitiveness in some always remains high; too high for their own good but not for the good of others. These sensitive ones are better equipped to comprehend, to react to right impulses, to suggestions from without or from within. They constitute the artists of life, in action, in perception, in interpretation and in achievement.

The term warshock, now so familiar but still misunderstood, was originally used to describe the complex effects wrought upon men on the firing line. There was the hideous clamor, the inconceivable stress and strain of active warfare, of battle noises and exploding shells; of awful sights, the tense waiting, the extremes of cold, of heat, of fatigue, of hunger and the like. These men, moreover, whose nerves thus broke down, were the pick of all lands. They were young, vigorous and especially trained to endure hardships. Yet some

of these did, and in civil life do, show degrees and kinds of "nervous instability" which render them liable to become temporarily, and sometimes wholly, useless as fighting or working units.

Shell or war shock later became a general, or blanket, or polite term to include any form or degree of mental or emotional shock or bewilderment. It may even now serve a useful purpose in directing attention—as a text—to what may happen to you, or to me, unless we possess, or acquire, undisturbable equipoise. Who does?

You observe here indicated a problem which it is the obligation of every one to take under personal consideration. Likewise to use every precaution and means to bring ourselves up to the top notch of such capabilities as reside in each. The urgent point is: how shall we deal radically and satisfactorily with similar exigencies in civil life? Our military psychiatrists have taught us invaluable methods which must be heeded by all.

Practically no limit exists to the powers of endurance or effort each one possesses if only the best use is made of energies by bringing them to the front through training and learning how to control and apply them. To be sure every one does exercise a certain amount of unconscious self control; does acquire habits of breathing, of digesting, of performing a series of automatic acts. Only the rarest individuals go farther and learn conscious or purposive control, to knowingly direct how, why, when and where, to apply powers to best advantage, whether they be mere unconsidered acts of living, moving and being, or such acts as make for the best possible behavior.

Those men and women who possess conscious control at all times are the ones that win. Fear, dread, doubt, indecision, form the bases of mental bewilderments and of failures to make good or to get as much out of, as is in, themselves. Confidence is a splendid quality. It may be in excess and verge on rash-

ness. It may, and often does, lead to self destruction, or disaster to self or others. The key to success is mental balance, "the know how" to put one's powers where, when and how. In the absence of this poise of will, this volitional equilibrium, the precise direction and application of latent dynamics, then the giant is no better off than the mid-get.

This being so, it should be worth while to learn something about those gifts on which you and I depend for achieving this victory in any of life's struggles. The materials of such wisdom are prodigally spread throughout the known world. Every one is interested in achieving good judgment because those who fail in essentials must suffer as individuals or as groups; as citizens, or as nations.

When the recent Armageddon began Germany was the only nation fully aware of what every one now knows, viz., that to retain solidarity we must each and every one realize the obligation for cultivating all useful powers which go to make up the responsible human being.

It is not easy to justify the existence of any adult who fails in his duty of acquiring as much conscious control, of mental and physical assets, as is possible. There is today no place in the social, or industrial, or professional scheme for one who indulges in the luxury of whim, caprice, or prejudice, or preferential belief provided he possesses a fair norm of capabilities. It is now work or "go die," if one be sound from the neck up.

Civilian workers in hazardous or stressful occupations are subject to somewhat similar shocks, or jolts, to sudden dislocations of customary conditions, to strange and difficult situations. Hence depreciations occur in earning capacities. Decrepitudes are acquired, such as afflict military men during the horrors of the firing line. Thousands of shaken men, with health undermined, returned from the battle zones. These men were potential pro-

ducing units, who must again take up the burdens of industrial competitions. We owe them greater consideration for the risks they have run. They are citizens of a country where each man enjoys the same opportunity as every other. Hence these remarks may supply helpful hints to many young men who now live and toil amid perils and may yet be called upon to expose themselves to worse ones in peace or in war.

Every potential home defender needs to know what he can safely expect of himself and how he can reduce dangers both in civilian hazards and during military experiences. The worst effects of shock can be prevented by using due precautions, especially by intelligent self training in behavior and endurance. In all shock inducing conditions there are greatest common measures. The first principle of good strategy is to learn our own powers and our own weaknesses. The second is to learn how to fortify our gifts against such jolts—large and small—as inevitably arise.

Every bold, energetic man who risks his body and mind—his organism as a whole—must expect, and will be pretty sure to get, some severe jolts, bumps, shocks, even injuries. He needs to know what shock is, its nature and phenomena, how the effects vary as arising from different sources. Also how it was that some disorganized men when judiciously treated seemed to display such trifling disturbances. Many kept right on after a knock out and returned with eagerness to the battle from these or similar exposures and stresses, while others, who appeared to be, and indeed may have been, equally robust and capable, none the less failed to come up to the scratch after a long count, fell behind, subsided into half workers or dependents.

Hence it is desirable to know what each one's shock coefficient is; our capabilities for recovering functional equilibrium; our automatic adjustability.

Information, more or less accurate about shell (or war) shock, was abundantly supplied from the experiences of

military surgeons. Especially from those experts called the Commission on Mental Hygiene. A resume of their findings should prove enlightening in civilian, industrial and professional life. They supply standards for economic behavior.

What is shock? Briefly: shock is the effects of a sudden and complete throwing of the whole organism out of gear. Body and mind being all one, they cannot be separated in appraising effects. Those shocks recorded in one domain may injure while causing small harm in another. Reaction again unites the resulting phenomena. The total make-up must be reckoned with in determining our status during any exigency, peril or sudden lowering of self defense energies. The nature of the effects is one of extreme exhaustion, a lowering of vital power and hydraulic (blood) pressure, also of one's dynamic reserves—especially of adrenalin—a paresis of the vasomotors, a benumbing or devitalizing of every active cell.

One shock super-added to others at last brings about the limit, the passing of endurance, hence a giving way all along the line. Factors of safety are overborne.

While some individuals are more sensitive, more readily shocked than others, no one can escape the effects of that which is capable of causing shock. The main point is the mass action of hurtful forces, disrupting the order of living procedures upon the onset of shock-inducing circumstances. Also the rotation in which they occur and, above all, the condition one is in when the shock is received. The personal factor is always dominant. This personal factor shifts, varies more or less, due to diversities in circumstances, environmental and accidental.

What Is It That Guards a Man Under Grave Stress,
And Sustains Him Against the Most Hurtful Effects

(Distress Reactions) of Shock?

This is morale, which is described somewhat thus: the emotions of fear

(personal harm) and dread (lest one may not fulfill one's obligations) and of pain, combine to disturb our machinery of self defense, of self preservation and sustentation, and to breed caution. In civilized life few of us become accustomed to any sort or kind of physical danger. Certainly no great demands are made upon our courage or fortitude. In each man, however, there exists the remains of early experiences (primal complexes) impulses, adjustabilities, in short his "herd instinct"; his willingness to sacrifice himself for the benefit of his fellows. He develops through ages certain noble qualities, a loyalty to his mates, to his chief, to his clan, to his nation. Indeed common ideals of loyalty thus arise for which the tribe stands. This ideal becomes measured by his readiness to suffer in person and uncomplainingly; to sacrifice himself for the common good. These attributes we justly hold in highest repute. They are constantly shown in thought and act. They become component parts of home makers as well as home defenders; of conscious intelligence and behavior.

On the other hand the tendency to shrink from personal harm or loss, or damage, or fear of death, are habitually suppressed, kept out of sight. When they do bob up—as intrude they will—the good citizen closes his eyes to the spectacle of his own disgusting exhibitions of cowardice; "he buries them in the limbo of the subconsciousness." Here they may lie dormant—forgotten—or again force themselves upon the consciousness in some way as to cause annoyance or trouble. These are known as "disordered wish fulfillments." Refuge is taken in civil life in deafness, in blindness, in lowered capabilities, in weakness, all which pass away as reassurance becomes complete. In short the original shock to emotion having disappeared, its physical expression persists as confusions of body functions and mental bewilderments.

What are our shock guards or defenders?

A discussion of body defenses would lead us too far. We will merely comment upon the mental or emotional or ethical defenses of those which have chiefly to do with energy supply and fluctuation. The Oriental saying: "wheels within wheels," confusing and mysterious as it may seem, yet affords a fair picture of the vast complexities of interlocking and antagonistic forces residing in each.

Human energies are so vast, so varied in their forms and manifestations, that we may assume them to be practically limitless. It is enough for each one to do his utmost to render available as much of his latent forces as possible, also to learn how to apply them to advantage. This is entirely possible and in degrees beyond expectation. The one element of uncertainty is the attribute of sincerity, of urgency and persistence of creditable wishes.

It should be known that the *effects of any shock is to so upset, confuse, throw out of gear the delicately poised human mechanism*, and that the first need is for *absolute rest, head low, quiet, warmth, food, sleep* until the worst immediate effects are over, and while one's natural forces are coming back to equilibrium. The next is *resolution to face responsibilities again* as promptly and fully as possible. The key-note of treatment is first rest, quiet, food; next sympathy, candor,—always sincerity,—and then prompt resumption of one's place in the scheme of life.

Why? The reasons why are too many to relate here. Indeed they are being made plainer every day. There is no question now, however, as to what precautionary measures must be employed. During the earlier months of the war mistakes were made by all the armies. Worse mistakes were made in civil shocks. No individual can be sure in advance what his particular recuperative powers (defense values or adaptive coefficients) are: or what concealed weaknesses, or beginnings of disease, may be his. He should have acquired a fair idea of where he stands in

the economic scheme. The getting and giving this information (appraisement) is one of the marked advances of modern medicine.

Any one of many vulnerable spots, structures or mechanisms may be so aggravated by shock as to hasten their giving way. The resolute man—too often stupidly obstinate—who gets a bad jolt and who insists on going about as usual, who delays seeking a place of safety or jauntily resumes his work, thus runs big risks. He thereby sins against his intelligence, his divine endowments making for judgment, matured by the experience of others and of experts. Such a man needs an expert guide to direct and dominate.

Shock is exhibited not only as a primary, but also as a delayed state. In most cases shock develops slowly; does not in its earlier stages interfere much with the faculties or functions. Especially do the automatic capabilities as of walking or talking naturally continue and mask the damage. The story is told that during the Queen's Jubilee the horse of one of the Indian officers fell, and he struck heavily on a stone surface but remounted and rode on for an hour and then suddenly fell dead.

Men shocked or wounded in battle are in the main choice specimens, young, strong, and carefully trained. Contrasted with men wounded in civilian accidents they vary widely in their endowments, their fitness or condition, as has been said. Yet those battle-injured ones seldom exhibit shock or "going to pieces" until an hour or more has elapsed. The common and more striking symptoms of surgical shock (trauma) are chilliness, pallor, and tremor. By far the more serious symptoms are not so readily observed, such as the effects of lowered blood pressure, deficient adrenalin, and other consequences of throwing the governing mechanisms suddenly out of gear. The worst instances of shock occur in those who have been long exposed to extremes of wet, also to drought, to cold, along

with fatigue and lack of sustaining food or fluid.

Lack of water and food aggravates the condition seriously. Loss of blood, of course, complicates the state, especially when this is large and continuous.

ENVOY

We may end by urging that each one shall take these graphic lessons home to himself. They will go a long way toward fortifying our defense reactions by supplying foreknowledge of how to conduct one's self under sudden, overwhelming exigencies.

The paramount lesson we must not fail to learn, as Col. Salmon pointed out, is this:

During the acme of the fighting our military psychopathic receiving hospitals had been perfected to such a degree that a soldier showing symptoms of mental stress would, inside of an hour or few hours, be received in a perfectly appointed ward, with competent experienced physicians and nurses. Now should his brother at home exhibit similar symptoms, the means in most communities would be a police cell, a delay of some days, treatment by the incompetent attendants or petty criminals, and finally he would be haled before a judge or magistrate who has no adequate knowledge nor sympathy, and absolutely no expert training. The chances of such a temporary condition being made worse or permanent, are only too pitifully probable.

Hospital Nurse: "You wish to see the young man injured in a motor accident. You are the lady he was with?"

Gwendoline: "Yes, I thought it would be only fair to give him the kiss he was trying for."—The Sample Case.

THE ANEMIAS OF INFANCY AND CHILDHOOD*

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It is not within the scope of this paper to discuss this big subject in an exhaustive manner. Increasing interest and experimentation have brought with them increasing confusion in our conception of infantile anemia. The introduction of new staining methods and of methods of studying living cells have brought before us many new ideas and classifications. As one reads the recent literature he is tempted to feel that the advances in our knowledge have made more complicated a subject which has always been confusing. It is natural that this confusion should exist. Science is constantly finding explanations for some of our empirical ideas, and contradicting others. The blood-forming organs of the infant and young child react in their own peculiar way to stimulation from various causes. Classifications are based on different criteria.

It is the intention of this paper to avoid the details of laboratory studies as far as possible. I wish to call attention to some facts, many of them old, which may be of help to us in developing a clearer mental process and a more practical attitude toward patients. The text-book type of description will be avoided. It is rather intended that emphasis be laid on certain conditions about which there is a danger of misconception, or on conditions whose importance cannot be too much emphasized.

Any rational conception of the subject must be based on a clear conception of blood physiology. The condition of the blood at any particular time is the resultant of the opposing forces of regeneration and destruction. On the one hand we have the activity of the bone marrow, portions of the spleen and liver, and the lymph glands. On the other we have the destructive pro-

cesses of phagocytosis, hemolysis, fragmentation, and increased fragility, phenomena that take place in the blood stream and probably in the spleen and liver. The activity of the bone-marrow is normally in exact proportion to the destruction of red blood cells. It has been estimated that from one-tenth to one-fifteenth of the red blood cells are destroyed in 24 hours. This estimate may be high. However, the destructive process is normally well below the capacity of the blood-forming organs, and abnormal stimulation finds an excellent response from the bone-marrow up to a certain point. Beyond this point one finds evidences of overwork and over-fatigue, this evidence consisting of the appearance of immature and embryonic forms of red blood cells and white blood cells, and of red blood cells deficient in hemoglobin. The reaction of the hematopoietic system of the child differs from that of the adult in several outstanding features; first, in the extreme lability, the low threshold for the appearance of the embryonic and immature forms; secondly, in the danger of overdraft on the deposit of iron with quick and striking reduction of hemoglobin; thirdly, in the tendency to a relative increase in the lymphoid elements; fourthly, the spleen, which has an important blood-forming function in fetal life, is very prone to take on this function in the infant when the hematopoietic system is called on for increased production. And finally, in this as in other respects, the infant's response to various stimuli, such as infection, is a total response and all the systems play a part in the fight.

There are numerous classifications of the anemias of childhood, none of which are now entirely satisfactory. Many of these classifications are based on the response of the blood-forming organs as studied in the laboratory—the laboratory evidence of regeneration and destruction. To be useful, a classification

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must be based on etiology and on clinical as well as microscopic signs. From this point of view the anemias fall into two general groups, those of unknown and those of known etiology. In the first group fall those conditions that are primarily diseases of the blood-forming organs. In the second group fall that very large group of cases in which we know that the anemia depends upon abnormality in the other systems of the body from an almost endless number of causes. In addition to these there are certain conditions whose status is undetermined or about which authorities differ.

The primary diseases of the blood-forming organs are relatively few. In this class fall first the leukemias. Confusion about leukemia in the mind of the physician probably complicates the attitude toward blood diseases as much as any other one fact. Here we see again the pronounced tendency of the infantile organism to react violently and totally. So we see a violent and acute reaction, a short rapid course of the disease, the patient usually not surviving more than a few weeks. If one will keep in mind this fact, that any blood disease in an infant that runs a chronic course is probably not leukemia, he is on safe ground. We do see in older children chronic myeloid leukemia with the hyperleucocytosis, the big spleen, the slowly progressing anemia, and the characteristic remissions, that is a common picture in the adult, but it is rare even in older children and probably does not occur in infancy. The far commoner picture is of the infant or young child who is brought for treatment because the parents have recently noticed that the child is sick, refuses his food, has had high fever, has been bleeding from the mucous surfaces or has ecchymoses of the skin, and has quickly become very pale. It is found on examination that there is a very striking pallor, petechial hemorrhages are seen in skin and conjunctiva and mucous membranes, there is moderate or marked enlargement of the spleen, usually rather high fever and marked prostration. The

blood gives a basis for diagnosis sometimes on the leucocytosis, but often only on the basis of the predominance of one type of totally abnormal cell, pathological lymphocyte or myeloblast. And so frequently, in spite of repeated transfusion and all other forms of treatment, the course is rapidly downhill to death in a month or less. It has even been suggested by some good clinical observers that this disease is very similar to many acute infections. It is not my intention to discuss the infectious theory of leukemia. This is mentioned for the sake of emphasizing the acute disease that leukemia usually is in the infant. It is generally the lymphoid type, but recently the question has been raised as to whether the acute myeloblastic type is not commoner than was formerly supposed. An "oxidase" stain on the abnormal cells has often proved that apparently typical immature cells were really myeloblasts. Clinically the diseases run the same course.

We must include under this heading also the purpuras. The clinical picture of the simple and hemorrhagic types is familiar to all. The question of diagnosis in these cases is rarely a difficult one. One must always be on his guard lest he mistake sepsis with the characteristic petechial spots for purpura simplex. The mistake has often been embarrassing, especially since the treatment and prognosis are so different. One cannot resist the temptation to allude to the frequent appendectomy done on the patient with Henoch's Purpura, or on one who has that less familiar condition that Dr. Osler so ably described in 1904 under the title of "The Erythema Group of Skin Diseases with Visceral Manifestations."

In connection, just a word about aplastic and pernicious anemia. It is possible that there is some condition in children that can rightly be called aplastic anemia. Certainly the chances are that a practitioner will see such a condition not more than once in a lifetime. But pernicious anemia, almost by definition, is a disease of middle life and

any such diagnosis in a child is extremely questionable. This is a point that deserves emphasis. One is so often tempted to make a keen diagnosis of a relatively rare condition that he forgets that one of the characteristics of infantile blood is the tendency for the blood picture of simple anemia to simulate the primary blood diseases of adults. Pernicious anemia is a distinct clinical entity, with characteristic blood and clinical symptoms, and these things must be present in order to justify the diagnosis.

Finally, we must consider for a moment congenital hemolytic jaundice. This is a condition that must always be thought of in the examination of an anemic child who shows any degree of splenic enlargement. The outspoken cases present very little difficulty, for the appearance of the child with rather striking jaundice, the history of a similar condition in previous generations of the family, the great enlargement of the spleen and the history of the characteristic "crises of deglobulization" are a typical picture. One must remember that many of these children present very little jaundice and a less definite history and are much more difficult diagnostic problems. One must approach the problems with the realization that the most important points for diagnosis are, 1. Family history. 2. Jaundice without bile in urine, and without clay-colored stools. 3. Distinct increase in the fragility of the red blood cells when suspended in hypotonic salt solution. This last test is of the greatest importance, and although it is not one that can be used by the busy practitioner as a routine, yet it is a relatively simple laboratory procedure and is diagnostic. It is in these cases that splenectomy has its most promising field.

"The Anemias of Known Etiology" form the bulk of all cases seen. The causes are almost without number, and a detailed discussion of them will not be undertaken. It is advisable that these causes be grouped into some general classification. The following seems

fairly satisfactory from a practical point of view:

1. Mechanical—Hemorrhage, Hemophilia, Scurvy, Hemorrhagic Disease of the Newly Born.

2. Nutritional — Faulty Feeding, Milk Anemia, Prematurity, Rickets.

3. Toxic—Following acute infections. Following certain diseases, especially Nephritis, Tuberculosis, Syphilis, Acute Rheumatic Fever, Malaria, Pyelitis. Associated with intestinal parasites. Lead poisoning and poisoning with various chemicals. And that following any prolonged illness, such as prolonged gastrointestinal upsets.

It would be trite to go into a discussion of such obvious conditions as most of the above. I would like to briefly discuss two of these conditions.

The first of these is a condition that is frequently called milk anemia or alimentary anemia. Hemoglobin consists of two parts, an iron-containing pigment and a protein, globin. Hemoglobin contains only about 0.3 per cent iron, but this portion is of the greatest importance, for the oxygen-carrying capacity of the blood depends directly on the iron it contains. The globin portion is a very constant factor and is supplied by any ordinary diet. Hematin is a substance closely related to chlorophyll and other pigments found in plants, and the hematin of mammals probably comes from chlorophyll and other related plant pigments. Hemoglobin cannot be synthesized from iron and globin alone, for the pigment element is equally important, but this is usually present in sufficient amount in the infant, and the iron is the element most likely to be deficient. It was shown by Bunge in 1889 that there is a reserve supply of iron in the livers of many newborn animals, and that this is deposited during the last part of pregnancy. He also showed that this deposit was proportioned to the normal nursing period of that animal. In the human infant who nurses relatively long, the deposit is large and during the first few months is in about five times the concentration of iron in the adult liver. This supply diminishes

rapidly during the first year and probably more rapidly in the artificially fed than in the breast fed baby. By the ninth or tenth month this supply is beginning to be exhausted in any exclusively milk-fed baby. In these facts we have the explanation for two of the commonest and at the same time most easily prevented conditions the pediatrician sees—the anemia of prematures, and the anemia seen in the exclusively milk-fed baby during the latter part of the first and the beginning of the second year. The premature baby has never had the iron deposited, and the older baby has used up the deposit. Neither breast nor cow's milk contains an appreciable amount of iron. The figure is given as 0.55 mgm. per liter for breast milk and 0.17 mgm. per liter for cow's milk. Both clinical and experimental evidence proves to us that at about eight months an infant's diet must contain iron and pigment, or that infant's blood will suffer from deficiency of these substances. It has been maintained by some that there is a substance in cow's milk and goat's milk that actually produces anemia, and there is some ground for this. However, we know that anemia can be prevented by giving iron and pigment-containing food before the iron deposit is exhausted, and we also know that the prevention is easier than the cure. There are several satisfactory methods for this prevention. Of all the vegetables spinach contains the greatest amount of iron, twice as much as string beans, four times as much as carrots and twice as much as peas. It is also an easily digested food. Its carbohydrate content is low and not available by digestion. All these vegetables contain iron and pigment. In addition to these there is a large content of iron and pigment in egg-yolk and in beef-juice. So, we have at our disposal many easily procured and very digestible foods to use for this purpose. One can begin to accustom the infant to these foods by giving about the seventh or eighth month a clear vegetable soup made from several of the above-named vegetables and

giving it nearly fat-free. At nine or ten months the actual vegetables may be given with perfect safety. The premature must be handled a little differently. Probably the safest method is the administration of inorganic iron in the form of the saccharated oxide or as a plain reduced iron in dose of 1-2 gr. three times daily.

In somewhat the same etiological class falls the anemia associated with rickets. It cannot be said with certainty that this is a specific anemia, separate from that seen as a result of poor hygienic conditions. There are many who maintain that the lessened production of blood is a distinct part of the disease. It is a regular occurrence in cases of well-marked rickets, and seems to reach a greater degree, with more tendency to enlargement of the spleen, than the usual type of anemia that is secondary to faulty hygiene or nutrition, and the blood returns to normal quickly following the administration of cod-liver oil and exposure to sunlight.

There is a small group of blood abnormalities that must be given a separate heading in a classification. It is to be hoped that further investigation will place these conditions in their proper places as to etiology. At present the conflict of evidence and opinion forces us to discuss them as diseases of unknown etiology and as unclassified.

The first of these is a rather broad group, and probably is composed of conditions due to many different causes. It will here be called "Splenic Anemia of Children." The condition described by Banti and called by his name is not included under this heading. The child presents the clinical picture of marked anemia with rather marked enlargement of the spleen and no adequate explanation for the anemia on examination. The blood picture is that usually spoken of as "secondary anemia," with a greater proportionate reduction of hemoglobin than of red cells, and with relatively few abnormal forms. And this anemia proves surprisingly stub-

born to treatment, only yielding after a long period and frequently only after repeated transfusion. These patients may represent instances of prolonged over-stimulation to the bone-marrow from various causes, acute or chronic foci of infection, etc., where the hematopoietic system has reached a stage of rather profound fatigue, the spleen has joined in to help in the fight, and the whole system is slow in responding to corrective measures. Eventually they will do well under rather intensive therapy. Banti's disease differs in that it has the associated cirrhosis of the liver and a bad prognosis usually.

I would like to call your attention for a short time to that condition known as "The Anemia Pseudoleukemia Infantum" of von Jaksch. It deserves special consideration, for its rather indefinite character makes it a tempting diagnosis. It is doubtful whether we are justified in separating this condition from that discussed above as "The Splenic Anemia of Children." It is in this group of blood abnormalities that we are brought face to face with the problem of the peculiar blood physiology. Evans and Happ in their excellent analysis of cases reach the conclusion that this anemia, with splenic enlargement and without specific blood picture, forms one large group that differ only in degree and not in fundamental cause.

The condition referred to as von Jaksch's Anemia now includes a larger group of cases than the condition he originally described in 1890 and 1899. His description was of four cases who showed marked anemia, changes in size and shape of cells, a leukocytosis, an eosinophilia, and enlargement of the spleen and lymph nodes. The prognosis was good as opposed to leukemia. We now think of this condition as an anemia occurring between the ages of six and eighteen months, characterized by a marked reduction of hemoglobin and red blood cells, usually with a leukocytosis, often with an eosinophilia, with the appearance of all forms of immature red and white blood cells of both the lymphoid and myeloid series, with some

degree of splenic enlargement, and with a prognosis that is good as to the effect of the disease but bad in that susceptibility to infection is very great.

Certainly we must admit that the line of demarkation between such a condition and anemias due to many unknown causes is very indefinite. Especially is this true when we consider the peculiar reaction of the infantile blood system.

It is intended that the points that have been dwelt upon should direct our thoughts to a very practical lesson. With a large subject in such a state of uncertainty, with many conditions unplaced in a classification, we must feel that our duty to our patients is to so carefully analyze the causes that as many as possible be diagnosed accurately from an etiological point of view. The danger is that we will pin a bad prognosis on the child whose blood picture tempts us to put it in the class of primary blood diseases. In many of these cases there can be found a cause whose removal will be of untold benefit. This cause is often a very obvious one—rickets, faulty hygiene, faulty feeding, chronic infection, intestinal parasites or lack of some essential in the diet.

A discussion of treatment would entail going into all the classes of causes, correction of hygiene and habit, regulation of diet, removal of foci of infection, etc. These are fundamental and obvious things. Especially should attention be called to transfusion. This measure has become the boon of pediatrics and has come to stay. There is an almost endless number of conditions that are more benefited by this measure than by any other. Naturally this is more true of the anemias than of any other condition. One undertakes it with a feeling of relative security since the child's reaction to the administration of foreign blood is much less violent than the adult's, and the benefit greater and more lasting. It should be resorted to in the marked cases and promise of improvement is safe. But the bulk of cases will be those whose anemia is to

be treated by less heroic means. Improvement in our therapy will be in proportion to our correct etiological diagnosis.

I have attempted to bring out three points—

1. Our knowledge of the anemias of childhood is still in an indefinite state.

2. The infant's and child's blood reacts differently from the adult's to various forms of stimulation.

3. The cause of the anemia is usually a simple one, and the result of treatment dependent largely upon careful search for this cause.

THE TREATMENT OF SUPPURATIVE APPENDICITIS*

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Dr. Willis, of this city, has within the last two years repeatedly called attention to the apparent marked increase in the mortality from appendicitis and urged that prompt steps be taken to correct the dangerous situation.

A part of the increase has no doubt been due to improvement in statistics, but the greater part is from various preventable causes.

Twenty years or more ago appendicitis was the favorite subject of discussion at our meetings, and took up much space in the various journals. It was talked about and written about so much, that it really became a nuisance, and to such an extent that some societies practically forbade its being put on the programs.

This undoubtedly had much to do with the present situation.

Such apparent indifference on the part of the older surgeons has had a bad effect on the younger ones, and undoubtedly has made them look upon appendicitis as a much simpler ailment than they should.

Added to this, we must also remember that the operation for appendicitis is often considered an extremely simple one, and in consequence many men who are not experienced and trained surgeons, are performing it.

It is true that the removal of an unruptured, non-adherent appendix is simple, and a doctor without training in

surgical technique, but who knows how to be clean, can successfully perform the operation and get a good result.

But the trouble is that one never knows just what sort of a condition he is going to find, and a certain proportion of these simple cases, on operating the abdomen, turn out to be difficult and dangerous ones. The tying off of an inflamed appendix and suturing the wound is indeed simple, but if the appendix has ruptured, and infection has been spread over a portion of the abdominal cavity, the case is one that requires a master hand and a thoughtful and experienced mind, to save the patient's life, the vital attention being given not only in the operating room, but in the after care.

Here I believe we have one of the chief causes of increased mortality.

There has been great improvement among the general practitioners in the making of prompt and early diagnosis, and advising early operation, and yet even here there is room for more general educational work.

In 1915 we presented a paper on the subject of suppurative appendicitis before the Southern Medical Association at Dallas, and much that we shall have to say in this discussion, will be a repetition of our remarks on that occasion, with addition, of course, of certain improvements which have been developed since that time.

We would again urge that in the transportation of such cases, the pa-

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tients be always propped up, and kept to some extent on the right side. The reason for this is obvious. To aid in such transportation we use a stretcher which is so arranged that the upper portion of the patient's body can be raised to any desired angle.

Cathartics should never be given in acute appendicitis. Low enemas may be safely used with the patient in the elevated posture.

It is our custom, when a case of suspected suppurative appendicitis reaches the hospital, immediately to place him on an elevated bed, on the right side. The first question for us to decide is whether the case demands immediate operation or a delay of a few hours will be better. After a tiresome trip a short delay is often best for the patient, the local condition permitting. In deciding this point, the white blood count is most helpful. If above 15,000 we usually operate at once. The degree of tenderness, rigidity of the rectus, distention and condition of pulse, however, all must be considered.

Except in desperate cases, we nearly always give a low turpentine enema. If there is delay, the skin is prepared; if not, the shaving is done while the anesthetic is being given and the skin painted with tincture of iodine.

The anesthetic is of major importance. In our own clinic we are much attached to nitrous oxid-oxygen, which we have now used in 15,000 cases, not only without mortality, but without any bad effects either direct or indirect. It is especially helpful in severe appendicitis, adding practically nothing to the shock, producing no irritation of the lungs or kidneys, and accompanied either by no nausea or a minimum amount. In skillful hands it seems to be entirely safe. In the many desperate cases where we have employed it, it apparently has added nothing to the risk. We have frequently resorted to it where we would not have dared to give chloroform or ether.

Even in general anesthesia cases, we block the region to be operated on with novocain, greatly lessening the amount

of gas required, giving better relaxation of the abdominal wall and lessening shock.

In bad cases, regional anesthesia may thus be used in opening the abdomen, and the general anesthetic employed only if it is found that much intra-abdominal manipulation is required.

A large proportion of our clean appendix cases are operated on under regional anesthesia alone.

The location of the incision in cases of suspected suppurative appendicitis is important. Drainage through the old longitudinal incision leaves a very weak spot which nearly always requires operation to close. Many surgeons advocate a counter opening for drainage. This is often unsafe, not affording a sufficiently free outlet for the pus. For several years we have employed the "transverse incision" in these cases. We make the skin and fascia cut more or less transversely, then separate the muscle fibres and stretch the wound as wide as may be needed, giving abundance of room for all necessary manipulations.

The drainage materials are brought out at the extreme outer end of the wound. To bring this drainage opening as far as possible to the right requires at times the cutting of some fibres of the muscle. The main part of the incision is cleansed thoroughly with bichloride, dichloramine-T applied, and sutured layer by layer with chromicized catgut, reinforced by a few sutures of silkworm gut. This method, even when larger tubes are used, affords the best of drainage and leaves the weak spot so far out that it rarely leads to hernia.

The toilet of the intestines and peritoneum should have the most careful attention. In that large class of cases where there is a small abscess, completely walled, with the general peritoneal cavity free from infection, the operator should be careful to prevent escape of pus. To do this, salt pads must be neatly packed around in every direction, making a complete wall protecting the free peritoneal cavity. Then only should the adhesions be loosened. This

loccening must be done so gradually that the pus will come out slowly and be absorbed by small sponges as rapidly as it emerges or removed by suction pump. When the pus is all out the pus cavity is carefully dried, and not until then should the appendix be sought for, unless, of course, it is free in the abscess cavity. The appendix is tied off with chromicized catgut, the stump cauterized with pure carbolic and turned in (if the tissues will allow) with a purse string suture of chromic gut. The use of non-absorbable material such as silk or linen for either ligatures or sutures in these drainage cases will often lead to troublesome sinuses.

After the removal of the appendix the pus cavity is again dried out and packed with tails of gauze passed through rubber dam tubes. The dam prevents much of the pain of dressings.

The packing should cover all infected surfaces. The salt pads are now removed, the drainage materials brought out at the outer end of the incision and the wound closed as before.

In large abscesses adherent to the abdominal wall, where the pus is reached extra-peritoneally, while careful examination should be made with the fingers in the abscess cavity for the appendix, it is manifestly unwise to open the peritoneal cavity in further search. Such a procedure would convert a simple harmless condition into a severe and dangerous one.

We have always contended for this method. Statistics show that but few of these cases have a recurrence. It is rarely necessary to perform a secondary operation, though the situation should, of course, be explained to the patient.

The same course should be pursued in those cases of large abscesses which are non-adherent to the outer abdominal wall. They are treated exactly like the small abscesses, except that if the appendix is not readily found it should not be searched for further.

And now we come to consider that very important class of cases of suppurative appendicitis in which the abscess has not been walled off by adhesions, and

in consequence the general peritoneal cavity has become infected. The degree of severity and the extent of the peritonitis depends on the length of time since the rupture, the resisting power of the patient and the position in which the patient has been kept. We could mention a number of cases where the "position treatment" was followed from the beginning of the attack with most helpful results; at operation the lower abdomen being found free of pus, which had collected only in the pelvis and around the appendix.

In the operative management of these cases, the transverse incision must be stretched to allow free access to the peritoneal cavity. The greatest possible gentleness is exercised in the handling of the tissues.

No irrigation should be used, but the pus wiped out carefully with sponges and pump. After all the pus which is accessible is thus cleaned out, pads are cautiously inserted and the appendix searched for and removed, a pad being packed into the site of the appendix, which is usually quite dirty. The pelvis is often found full of pus, which should be removed by suction. A large soft rubber tube is passed well down into the pelvis and another slightly smaller up toward the liver. The tubes are made of blue rubber, quite soft and yet firm enough not to kink. Frequently we pack the old appendix site with strips of gauze, though in some cases we use a third tube instead. The ends of the drains are brought out at the outer end of the incision, which is sutured as described before. Gauze wicks are passed down into the tubes to facilitate drainage. The dressings are securely fastened in place to prevent slipping. The patient is put to bed elevated at an angle of from 15 to 40 degrees, and kept constantly on the right side. This position is so arranged that the outer openings of the tubes become practically the lowest point of the pelvic and abdominal cavities. We have for some years contended for this position as against the simple dorsal elevated position, and our experience bears us

out as to its usefulness and superiority. We realize that many good surgeons advocate the other position, and yet we believe that we have demonstrated that the combined elevated and right side position is superior.

Of course, in the most desperate cases of diffuse suppurative peritonitis the operation must be performed with extreme rapidity and consists often of simply making an opening and putting in large tubes, the appendix not even being sought for unless it be close at hand.

In the after treatment of suppurative appendicitis we must divide the cases into three classes: the non-adherent abscesses, the large adherent abscesses, and those in which there is more or less general infection of the peritoneal cavity.

In every case elevation and the right side position are a safeguard and help.

In the first class we give salt solution by rectum by the continuous method in a small proportion of cases. The packing is gradually removed and replaced by rubber dam, the wound being dressed daily and made to heal from the bottom. The general treatment is simple. The patient requires but little medication. The bowels move without difficulty and liquid nourishment is begun early. There are necessarily some adhesions which must be borne in mind in dieting and in avoiding constipation, both during the stay in the hospital and for several months afterwards.

In the second class, adherent abscesses, the treatment is still simpler, the abscess cavity being treated by careful irrigation and sponging, and kept well open until healing is thorough from the bottom.

In the third class, the skill of the surgeon and his assistants is well tested in the details of the after-treatment. Good judgment and close and careful watching are required both in the local and the general handling. While now-a-days the greater part of surgical work is done in the operating room, here we have a condition in which the post operative treatment is of equal importance

with the operation.

Success in this treatment depends more than anything else upon the complete and willing co-operation on the part of the patients. We find it best to present the matter clearly before them, stating the exact condition, and making it very plain that their lives rest practically in their own hands. After such a conference between patient and surgeon there is usually no difficulty from that direction.

The most tiresome part to the patient is the position, but this may be varied a little from time to time, and is greatly helped by frequent rubbing with alcohol.

The administration of fluid by the bowel has the following good effects:

1. It so fills up the blood vessels and lymphatics of the abdomen and pelvis that they do not so readily absorb the septic fluids.

2. It delays the formation of adhesions, thus giving time for the pus to gravitate to the drainage canals.

3. It stimulates and nourishes the system and increases the power of resistance.

4. It is a convenient vehicle for the introduction of medicine and nutriment.

5. Its use prevents any difficulty in moving the bowels.

Many appliances have been devised for this purpose—some more or less complicated. The one which we use consists of an ordinary infusion bottle, regulating screw, visible dropper, double tubing (one branch to allow a gas outlet for the bowel) and medium size catheter for the rectum.

For the first six or eight hours we use normal salt solution, and then change to tap water. If diacetic acid shows in the urine at any time we add sodium bicarbonate, one or two ounces, to each pint of water. The urine must be frequently tested.

When the patient is badly nourished, or when the condition of the stomach prevents the necessary administration of food, glucose 1-2 ounce to the pint is added to the liquid, and furnishes the best rectal nutriment available. Other

needed medication, especially digitalis, may be added.

The usual rate of flow of the liquid is from thirty to sixty drops a minute. Ordinarily this may be kept up continuously for forty-eight hours, when it frequently becomes necessary to allow a short interval of rest from time to time. In most cases the infusion is continued off and on for from three to six days, longer being rarely necessary. The patient is kept in the elevated right position for about the same length of time.

The degree of elevation varies with the case. We try to place the patient in such a position that the outer openings of the tubes become as nearly as possible the lowest point of the pelvic and abdominal cavities. We have never yet had a single case in which the drainage from this position was not good. The bed elevator is made of two boards 41 inches high and 11 inches wide at base, fastened together 28 inches apart and notched at intervals of 5 1-2 inches. The notches are to hold the lower cross bar of the head of the bed. The foot rest is placed at the foot of the bed to prevent the patient's slipping down.

In desperate cases, we frequently give salt solution under the skin or into the vein, on the operating table, and repeat the process by the former method every few hours on account of depression or if the patient fails to retain sufficient fluid by rectum. Occasionally transfusion is needed in depleted cases.

In suppurative peritonitis cases we are never in a hurry to start nourishment by the mouth. Ice and water in small quantities are given in a few hours after the operation, but liquid nourishment by mouth, even such simple food as albumen water, is delayed for twenty-four hours longer.

The stomach tube is resorted to promptly and repeatedly on the least sign of acute dilatation. One must be slow in the adding of soft diet and especially solid food. There are necessarily many adhesions, and great care should be exercised to prevent intestinal obstruction. If such symptoms should appear, the patient is put at once on the elevation and rectal treatment and

all nourishment by mouth cut off. It is remarkable how quickly severe obstruction symptoms will disappear under this single treatment.

Cathartics should be used cautiously in suppurative peritonitis cases and in a simple form. A low cleansing enema is given daily, and if the bowels do not move sufficiently, turpentine is added. If this is not sufficient, notwithstanding the previous cathartics, we give cautiously a small high irritating enema containing turpentine, salts, glycerine, etc. Where the continuous rectal treatment is being used there is very rarely any difficulty in moving the bowels.

In the way of drugs, besides the cathartics already mentioned, we use, when indicated, moderate stimulation. Physostigmine salicylate is certainly helpful for gas distention, as is also asafetida by rectum.

The wound dressing is important. For the first few days this is done morning and night. Suction is used to clear the tubes of fluid and fresh wicks are inserted. Free absorption of fluid from the bowel sufficiently delays the formation of adhesions and the discharge from the tubes continues quite free. Later the tubes are gradually shortened and finally replaced by rubber dam, which is used as long as it is necessary to keep the sinuses open. The healing of the resulting sinuses is greatly hastened by the use of Dakin's solution which is a part of our routine in such cases.

It would hardly be interesting, and would take up too much time, to give a detailed account of our cases, which have been many and varied.

Outside of the moribund cases, we have had but few fatalities.

With the Fowler-Murphy treatment and our modifications, our results have been most gratifying. While we look upon all cases of general peritoneal infection as being entirely uncertain as to outcome, yet we know that, with the present methods of treatment, with thorough co-operation on the part of the patient, and with a resisting power not previously too much depleted, practically all will recover.

BETTER OBSTETRICS: HOW TO OBTAIN IT*

GEO. H. ROSS, M.D., Durham

Midwifery is as old as the eternal hills. Its inception so far antedates the birth of our own civilization that its origin is shrouded in oblivion. We cannot, with any degree of certainty, trace its history if we would. We can only state that its origin was conceived first in human sympathy, and as the physical stamina of womanhood decreased with the centuries midwifery became a necessity.

When migration followed the conquest of arms or discovery, the midwives accompanied that migration. When Captain John Smith landed at Jamestown and the Pilgrim Fathers landed at Plymouth Rock, the midwives landed with them. Their presence had become a necessity of civilization.

So universal was the custom of employing midwives and so strong the prejudice against men engaging in obstetrical practice, that in 1522 a Dr. Werth of Hamburg, who, dressed as a woman and thus disguised, being detected attending a case of labor, was burned at the stake for his offense; more than a hundred years after this incident Dr. Percival Willoughby, an eminent English physician, in order to assist his midwife daughter in a case of difficult labor, was forced to crawl on his hands and knees into the darkened room of the parturient without her knowledge of his presence.

Chereau said that obstetrics was first empirical, then superstitious and next scholastic, and in order to complete Chereau's statement in the sense of bringing it up to date, we add lastly *aseptic*.

Obstetrics did not reach its scholastic stage until the seventeenth century, at which time it began slowly to emerge from the hands of ignorant matrons into

the care of physicians. Aseptic obstetrics had its origin with this, the twentieth century, and I will venture the assertion without fear of contradiction, has done more toward alleviating the suffering of mothers in labor and saving the lives of their progeny than was accomplished in both the empirical and superstitious periods combined. Aseptic obstetrics is yet in its swaddling clothes, and therefore is practically a stranger to all the midwives and many of the physicians. The problem before us as physicians is to cut down the maternal death rate in obstetrics. I verily believe that if we could by some means influence all the midwives and physicians to practice aseptic obstetrics we could cut down the present maternal death rate by at least fifty per cent.

There are just two reasons why the maternal death rate is so high. First, the great advance in the knowledge of the science and art of obstetrics fails to reach the midwives and sometimes members of our own profession. Secondly, a natural tendency to follow the line of least resistance and keep to the old beaten path. These two evils can only be overcome by the education of all the midwives and physicians as to the exigencies of aseptic obstetrics, and then our living up to the light that has been given unto us.

Now let us look at some of the figures connected with the maternal death rate of which we have been speaking. The death rate for the United States in 1915 was 6.1 *per thousand live births*, which was the lowest in the last ten years. In a glance at the rate of the other so-called civilized nations, I find them all lower than our own, with the exception of two, Spain and Belgium. Japan has consistently kept hers under 4 per thousand. Holland has reduced hers and kept it under 3, with the exception of one year. Our own country, looked upon as

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a scientific nation, is fourteenth among the countries of the civilized world.

Suppose we observe the figures of some of the states in our own country and see how we stand locally as compared to our sister states in maternal deaths. There are thirty states in the registration area, of these thirty, fourteen had a higher death rate in 1923 than in the previous year. Our sister on the south had the highest death rate—9.7 *per thousand live births*, Utah the lowest—5. Virginia on our north ranks second above us with 7.4. Only four of the thirty states have a higher maternal death rate than North Carolina—in other words, 25 of the 30 states have a lower death rate than North Carolina—8 *per thousand*. Our rate was the same in 1922 and 1923 which shows we are at a standstill so far as aseptic obstetrics is concerned.

Such figures would naturally prompt us to ask: *What is the matter with obstetrics?* Such figures should prompt us to seek the causes of this high death rate in our state—8 *per thousand*. South Carolina, Mississippi, Maine and Delaware are even worse. Do you feel that the indictment which these figures bring forth should be shouldered upon the midwives of our state? Let us see if it can. Dr. Edward P. Davis of Philadelphia says: "The midwives under strict control do comparatively little harm, but the doctor who does the obstetric work to get the work of the family, giving it as little time and attention as possible, because it pays but little, is the one responsible for many obstetric disasters. The general practitioner, so-called, is the greatest danger in obstetrics." Dr. Julius Levy of the Bureau of Child Hygiene, Newark, N. J., speaking through the February, 1923, issue of the American Journal of Health, in a treatise on the comparative responsibility of physicians and midwives as to maternal mortality, gives a new angle to this tradition, in which he presents charts and tables setting forth at length his observations. He shows that in the 15 largest cities of our country with the

single exception of Pittsburgh, there has been a gradual decrease in the number of cases reported by midwives, and of midwives reporting cases; yet there has been no decrease, but rather an upward tendency, in maternal mortality; and he further adds that the *centers having the largest percentage of midwives have the smallest percentage of maternal deaths*.

Now let us again turn to the figures of our own state and see how the physicians and midwives compare in reference to maternal deaths. I have taken the counties in which the midwives are most active and figured the percentage of the births they have reported, and I find the rule to be as the percentage of births reported increases there is a corresponding decrease in the maternal death rate. For example, in 1923 Moore midwives reported 44.3 per cent of births in that county. Wake County midwives reported 28.2 per cent in their county, while in Moore County there was a maternal death rate of 3 *per thousand*, but in Wake the rate was 7.5 *per thousand*—over twice as high. Madison County midwives reported 41.1 per cent of births, while Durham County midwives reported 7.2 per cent: in Madison the maternal death rate was 1.6, while in Durham it was 11.3 *per thousand*—nearly 8 times that of Madison. Columbus County midwives reported 63.3 per cent of births, while Beaufort County midwives reported 47.2 per cent: the death rate in Columbus was 6.1, while that in Beaufort was 8.5 *per thousand*. In Wilkes County the midwives reported 41.4 per cent of births, while in Johnston County they reported 30.4 per cent: in Wilkes they had a maternal death rate of 4, while in Johnston the rate was 9.1 *per thousand*. And so I have found the rule to be—a *higher percentage of births reported by the midwives means a lower maternal death rate*.

But in order to offset any conclusion you might entertain in your minds as to my running a brief for the midwives of our state, I will call your attention to a glaring exception to the rule I have

just stated. In Hoke County the midwives reported 64.5 per cent of all births and had a death rate of 20.2 per thousand, incidentally the highest in the state.

Now if the blame for the high maternal death rate of N. C. cannot justly be laid at the door of the midwives—from whence does it arise? After a careful study of this question, it is with exceeding regret, brethren of my profession, that I am forced to agree with Dr. Edward P. Davis, when he says: *"the family physician is responsible."* This is indeed a serious charge against us as the conservers of public health and physical welfare of our state, especially when it can only reasonably be laid to the lack of individual professional attention and technic—or in other words professional negligence which according to the general advancement and knowledge of medical science, with which the physician stands charged, is nothing short of criminal.

It is high time we are arousing ourselves to this fact and to its remedies. What are they? Here they are on three fingers. 1. Prenatal care. 2. Equipment. 3. Aseptic technic.

Under the head of prenatal care, I shall discuss briefly what I consider the four principal things to do.

1. Examination. As early in pregnancy as possible see your patient and make a thorough examination of her, making a record of this examination in a book carried with you for that purpose. This book should be divided into 12 sections, one for each month of the year, giving each patient a page so that her record may be accurately kept on it. Be sure to fill out a card from the State Board of Health and send it in, so she will get the nine letters sent out from Raleigh, which will be highly instructive and interesting to her.

2. Diet the patient. Especially in recent years, I have found that a great majority of my patients have been inclined to eat entirely too much. If there be one thing of most importance for safety of a pregnant woman it is the

restriction of her diet. After she gets over the first few months of nausea and vomiting, say from the fifth month on, many women will literally kill themselves eating. Remember she should not add on more than 1-13th of her original body weight while going with child.

3. Blood pressure. Keep an accurate record of her blood pressure every month for five months, then every two weeks. Remember a rise indicates toxemia. I find most women run from 115 to 125 or 130 normally. A rise to 140 means trouble, and to 150 is alarming. Such a patient should be put to bed for four days with only water and lemonade; cream of tartar, soda and salts in the morning. Take blood pressure at the end of the fourth day and you will find it greatly reduced. I have recently seen a patient have a drop from 192 to 142; another from 158 to 118. I have been referring to systolic pressure.

4. Urinalysis. Take urinalysis every three weeks until six months, then every two weeks. Advise the patient how to select the specimen so as not to have mucous and vaginal secretions. If she starts to the bad, think of her diet, not of medicine,—for outside of laxative and purgative medicines, there is nothing to give that is beneficial to a pregnant woman.

Under the head of equipment, I shall merely mention what every physician doing obstetrical practice should carry to be efficiently equipped. The following is reasonable: cap and gown, two hospital solution bowls, an agate saucer 6 inches in diameter, two pairs of rubber gloves, three-fourths yard of rubber sheeting, 6 Kelly clamps, two pairs scissors, straight and curved, thumb forceps, 2 Luer hypo syringes and needles, needle holder and assortment of surgical needles, catgut and silkworm gut sutures, liquid soap or cake of lifebuoy, scrub brush, can of ether, inhaler, ergot and ergotole, pituitary extract, bulb syringe, ball of wrapping twine, bottle

of alcohol, rubber catheter, 5 yards sterile gauze, sterile bandages for uterine pack, lysol, bottle of sterile vaseline, baby scales and obstetrical forceps.

Finally, aseptic technic for the home. Before time for the confinement of your patient have her to prepare old soft cloths for vulva pads, folding them about 4 x 10 inches, also 2 pieces of cloth about 2 feet square, folded square. Put these into a sack, boil for 10 minutes, press water from them and bake in stove until perfectly dry. Now the preparation of the patient. Have s.s. enema given, clip and give local bath, sponge off with 1 per cent lysol solution, then with clamp, sterile gauze and alcohol cleanse area around the clitoris and sides of the vulva. Make a string four double out of wrapping twine for tying the cord, wrap this around your scissors and clamps, thus making them into a small bundle. Then place your gloves in bottom of thick cloth sack, fingers in same direction, fold the sack over, tie all into one bundle and boil. Scald your basins and agate saucer with boiling water. The bed should then be prepared as follows: oil cloth next to the mattress, then the sheet and on this put your rubber sheet, then the paper pad and one of the 2 feet square sterile cloths on top. Scrub your hands well, then go through the lysol solution you have prepared in one basin and put glove on left hand. See that the bed clothing is folded about half-way below your patients knees or lower. Examine your patient—the sac ruptures, the water is dipped up with agate saucer and poured into slop jar, the head is delivered between the pains, the baby is seen after the water is dipped up. The cord is clamped, tied twice and cut in sterile cloth so blood will not fly off on everything. Pad is then slipped down and folded back from bottom and one basin placed against the patient to receive the placenta. Next bathe patient with hot lysol solution, place a new pad under her and a sterile vulva pad. After baby is oiled and sponged bathe the cord with alcohol and dress

with sterile gauze, place drops in eyes and fill out the birth certificate. Watch the mother for one hour for hemorrhage and keep her on her back for three hours.

I have attempted in this short treatise to set out in a brief and general way what I would have you understand as aseptic obstetrics as applied to the home. I firmly believe, and you know of your own knowledge, that the best place for delivery is the maternity ward of some hospital, but due to a lack of space therein, and often a lack of financial means on the part of the patient, it is impossible for a large percentage of our prospective mothers to avail themselves of hospital treatment in labor. You will also agree that the superiority of the hospital over the home lies in aseptic treatment. Therefore it logically follows that the next best policy is to carry the superiority of the hospital into the home as far as possible, and to accomplish that I recommend to you aseptic obstetrics in the home, with the firm conviction and belief that it offers, at least at present, the only feasible solution of lowering the maternal death rate in North Carolina.

The idea that rural life is inherently wholesome and healthful has all the vitality of a popular legend. The crystal waters of the old family well, the gymnasium apparatus of plow and hoe and saw, the fresh food from field, garden, and dairy, the constant outdoor life, the mental serenity which comes from contact with nature have been so lyrically extolled by orators, chiefly urban, that it is hard to convince the man in the street that the farmer and his family are not healthier than city folk.

Yet there are many facts which point in quite the opposite direction. . . . New light has recently been thrown on this question by the examination of 3,478 male students in one of the large state universities of the Middle West. The results are distinctly favorable to the large cities of over 50,000 population as compared with small cities, countryside, and show the lowest number of physical defects. villages. The students from the large cities "It is a well-known fact," says a United States health official, "that the natural advantages which the rural districts possess are more than offset by the better health protection afforded the city dweller."—From Rockefeller Foundation Report.

SYNERGISTIC ANALGESIA IN CHILDBIRTH

C. L. SHERRILL, B.S., M.D., Statesville, Obstetrician Long's Sanatorium

"In pain shall the woman bring forth." Ever since this Biblical truth has been handed down to man, men have tried to perfect some method to assuage the pain and anguish incident to childbirth. The first effort at relieving pain was founded on superstition by ignorant midwives of the past ages. Many methods have been tried. Sir James Young Simpson, of Edinburgh, Scotland, used ether soon after its discovery to modify the pains of childbirth, and a little later he used chloroform. Some of the physicians of nearly a half century ago used powdered opium in the first stages and chloroform in the latter stages. Nitrous oxide and oxygen is being used rather extensively.

The most heralded method of recent years was "twilight sleep," which had many advocates, but, on account of the many blue and still-born babies, this method has been practically abandoned. The Potter version has some followers, but as a routine procedure is dangerous, and should be practiced only by the highly specialized expert.

The method I wish to describe is safe, and the technique is simple enough that it can be carried out in the home by the family physician. I claim no originality for this method. It was worked out by Gwathmey, Donovan, O'Regan and Cowan at the Lying-In Hospital, New York City. They tried many combinations before this method became standardized. The technique is:

1st. Cleansing s.s. enema, this to be followed by a colonic flush with clear warm water if bowel is not entirely empty. Catheterize p. r. n.

2nd. When the cervix is approximately two and a half to three fingers dilated, the pains regular, three to five minutes apart and of good duration, give morphia sulphate grain one sixth dissolved and sterilized in a small amount of water before it is drawn into

the syringe containing two c.c. of 50 per cent solution of chemically pure sterile magnesium sulphate. (This solution can be obtained in ampoules). The hypodermic should be given deep in the deltoid or other muscle with the needle kept in continuous motion, (simulating infiltration rather than a rigid injection); this to prevent pain and irritation. Give morphine with the first hypodermic only, telling the patient that the object is to relieve pain. From now on the patient should be kept as quiet as possible; the room should be darkened and loud talking and noise of all kinds should be avoided.

3rd. Within twenty to thirty minutes repeat the hypodermic of magnesium sulphate (without morphia) and give instillation. The instillation or retention enema consists of quinine hydrobromide grains twenty, alcohol drachms three, ether ounces two and a half, olive oil q.s.ad. ounces four, using the best grade of French or California olive oil. In a recent communication with Dr. Asa B. Davis, chief surgeon Lying-In Hospital, he states that, "The hospital is now trying out liquid alboline to replace the olive oil, and using forty-five drops of alcohol instead of three drachms as in the above mixture and this seems to work as well as the olive oil." This instillation should be given when the cervix is three or more fingers dilated and accompanied by good contractions. Tell patient object is to relieve pain; place patient on left side in Sims position; fill an ordinary rubber catheter (16 or 18 American) attached to a funnel or a large pressure syringe, with olive oil to exclude air, clamp off catheter, and with gloved finger of left hand inserted into rectum introduce catheter until the tube is beyond the presenting part, thus insuring retention. The bottle containing the mixture should be placed in warm water for a few minutes before it is

poured into the funnel. Remove clamp and give slowly, care being taken not to admit air between olive oil in the catheter and mixture in the funnel. This mixture should be followed by another half ounce olive oil at 100 F. to prevent rectal irritation. The fluid should pass into the rectum between contractions. During contractions clamp off and tell patient to inhale deeply and "squeeze up" in order to induce reverse peristalsis, and hold a folded towel against the perineum to prevent expulsion. Six to ten minutes are required for giving the mixture. Remove catheter gently and make pressure during pains for fifteen to twenty minutes. Make no examination within one hour as this might cause expulsion. Instillation may be repeated with safety in four hours. Repeat hypodermic of magnesium sulphate if needed. The standard treatment is three hypodermics and one instillation: the magnesium sulphate may be repeated for or five times if the sedative effect is wearing off, or is insufficient. In highly nervous patients or where long labor is anticipated the initial dose of morphine should be one-quarter instead of one-sixth grain.

From now on the patient may lie on her back, or in what ever position is most comfortable. Place cotton in ears and cover eyes with towel or some dark colored material; keep room quiet. When retention enema is finished the patient is as a rule drowsy and sleepy between contractions and may be slightly disturbed between pains, but apparently is not conscious of any real discomfort. It is the rule to sleep about four hours and then be awakened by the strong contractions. Hypodermic of magnesium sulphate may be repeated once or twice more if patient is conscious of pain. If there seems to be suffering a small amount of chloroform may be given with the last few pains. The mother seems stronger and recuperates more rapidly than when going through hours of agonizing pain. By this method you produce analgesia and amnesia, which are principally due to the synergistic

effect of the magnesium sulphate and ether. The quinine hydrobromide stimulates uterine contraction. These patients usually remain in a dreamy state and remember very little after receiving the rectal instillation; they are grateful and many will tell you that if they become pregnant again they will not look upon labor as something horrible. Occasionally some of these patients will groan and toss about on the bed considerably, but this is the exception. I wish to report a typical case:

Mrs. F. Prima para age 25 years; noticed first pains 3 p. m.; admitted to sanatorium 7 p. m., nervous and vomiting; was given an s.s enema. At 7:30 p. m., having moderately severe pains every one and a half minutes, cervix three fingers dilated, was given morphine one-sixth grain magnesium sulphate two c.c. This seemed to relieve pain very little if any; magnesium sulphate repeated at 8:05. Began rectal instillation at 8:10, completed at 8:16. At 8:18 patient beginning to feel drowsy; 8:25 pains were every three minutes, duration ten seconds; 8:35 magnesium sulphate repeated, patient drowsy, but not sleeping; 8:45 patient conscious of very little pain, contractions two to three minutes apart, duration ten to fifteen seconds; 8:55 patient drowsy, not suffering; 9:15 patient sleeping; 9:50 patient sleeping; 10:30 patient still sleeping; 10:45 membranes ruptured while patient was still sleeping. Patient aroused at 11 p. m. with violent contractions, but suffered very little pain; was given another 2 c.c. of magnesium sulphate. At 11:10 perineum beginning to bulge, patient sleeping between contractions. Was given a small amount of chloroform with the last few pains, baby born at 11:55 p. m. The next day the patient was happy from the night's experience and told me she suffered very little.

It is a sad reality that we are now passing through an age of racial suicide and conception is often prevented because of the anticipated horrors of labor. One of the menaces of the day

is the breaking down of the home life. Childless men and women are thinking less and less of the home and seeking simply the gratification of selfish desires. Matrimony sits lightly upon them; divorces become more and more common. *It is a fact that in our county of Mecklenburg, for the year 1924, of the sixty divorces granted, fifty-five were to couples having no children.* The use of preventatives is openly discussed and publicly advocated. In one city of our country there existed a race suicide club of young married people. The birth of a child results in expulsion from the club. Going against the laws of nature, to say nothing of the laws of God, must result in the weakening of the moral fiber and the physical strength. May it not be that, by taking away the fear and horror of the pains

of childbirth, we may not only lessen human suffering, but lend aid to our country in the restoration of the homelies and bringing the home back to its old-time place of power and influence?

CONCLUSIONS.

- 1st. This method alleviates pain.
- 2nd. It is safe for mother and baby.
- 3rd. It does not prolong labor.
- 4th. It can be given by the general practitioner.

5th. By alleviating pain incident to labor, it holds out a promise of lessening the present day tendency among young married people to prevent conception.

NOTE: I am indebted to Dr. Asa B. Davis, chief surgeon and the house surgeon at the Lying-In Hospital, New York City, for many courtesies and valuable instruction while there.

BONE TUMORS*

C. S. LAWRENCE, M.D., F.A.C.S., Winston-Salem, Lawrence-Cooke Clinic

To the average student the study of literature on bone tumors has been made difficult because of the lack of a uniform classification of this pathology. I know of no two text books or even two pathologists that agree on a definite uniform classification. The report of the Committee of the American College of Surgeons on bone sarcoma headed by Dr. E. A. Codman, (The American Journal of Roentgenology and Radium Therapy, Feb., 1925) has presented a splendid classification of bone tumors.

The classification submitted by the committee follows:

1. Metastatic tumors of the bone
2. Periosteal fibro-sarcoma
3. Osteogenic tumors, (benign and malignant)
4. Inflammatory conditions
5. Benign giant cell tumor
6. Angioma (benign and malignant)
7. Ewing's tumor

8. Myeloma.

The committee hopes to establish these definite clinical entities as the essential division of bone tumors.

I wish to outline three cases in this discussion. First case falls in the classification of osteogenic tumors, non malignant. Boy, age 13, admitted August 19, 1924. Chief complaint, tumor of upper end of tibia. Two years ago mother noticed small growth on his leg just below the knee joint (left), which has gradually grown until present, as large as an orange. He does not complain of pain but recently has been limping. Appetite poor; has lost weight; never had a serious illness. Tonsils and adenoids removed six years ago. Had influenza 1918, no complications; no history of trauma.

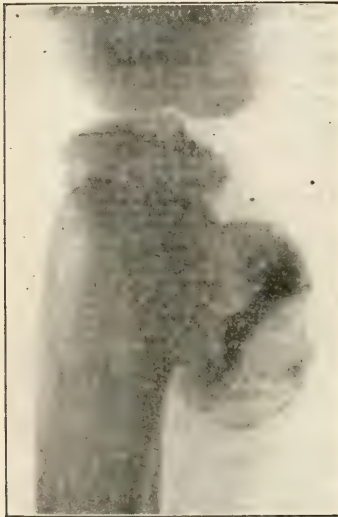
Physical Examination: Pulse 80, resp. 20, fairly well nourished. Just below the left knee joint is a hard bony mass attached to the tibia. The tumor is size of an orange, not painful, feels like bone. The skin over the tumor is healthy, freely movable. The shaft

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of the bone is normal in outline, not painful. The joint is free from pain on flexion and extension.

The urine is normal. Blood count 3,320,000 reds. 9,400 whites. Wassermann, negative.

Operation 8-19-24. Removal of tumor including capsule and part of healthy shaft of tibia. The capsule was not cut into. 8-30-24. Discharged from hospital, wound healed, condition good.

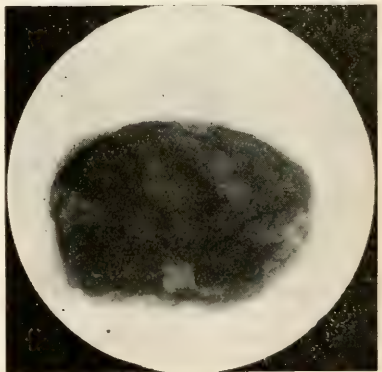
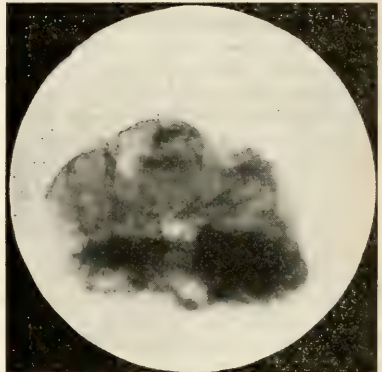


1. Case One. Osteogenic Tumor non-malignant.

Dr. J. C. Bloodgood was consulted in this case. He writes the x-ray has all the appearance of a benign exostosis, but advises complete excision without cutting into the tumor and chiseling the base with a large piece of normal tibial bone. At his request the specimen was sent him. His report follows:

The gross specimen looks exactly like the tumor springing from the medial or inner side of the upper end of the shaft of the tibia below the epiphysis. In looking at the tumor in the x-rays we ask ourselves whether cartilage is present, I don't know whether I can answer

this from the x-rays only. But when we look at the specimen we find cartilage on the surface, just the same as we have cartilage on the joint end of the bone. On top of the cartilage is a connective tissue membrane which we can strip back, which we do not have on joint surfaces. But sometimes fluid forms between this connective tissue and cartilage producing a bursa, giving rise to a soft part tumor called exostosis-bursata. On making section through the bone there is cancellous bone on epiphysis with no evidence of cartilage. This is the true exostosis.



2. Case One. Showing specimen after removal.

MICROSCOPIC REPORT.

Section 1. Periphery of tumor showing cartilage and hemorrhagic bone

marrow. First we see cartilage. Then as we move the section we see cartilage in which ossification is taking place. Then deeper bone in which there is some cartilage. The bone marrow is very cellular and takes an eosin stain, contains a large number of bone marrow cells and blood.

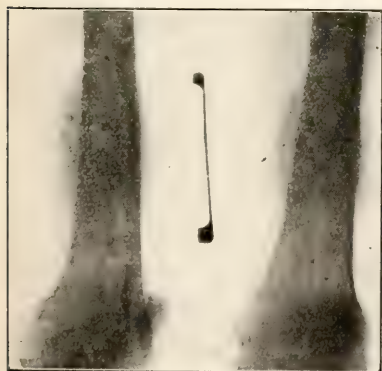
Section 2. Fatty bone marrow beneath hemorrhagic bone marrow. Here we see spicules of bone in which there is no cartilage. Then we see fatty bone marrow in which there are no cells.

Section 3. Shaft of tibia beneath tumor. Here we see dense bone and in between the bone, fatty bone marrow and in this fatty bone marrow islands of cells surrounding the capillaries. There is nothing suggestive of malignancy in any of the sections.

April 10, 1925. Examined. Bone smooth, no enlargement or evidence of recurrence, general health good.

The tumor here described is a benign osteogenic tumor. The point is, if the tumor is not carefully removed without cutting into it and leaving a portion of the capsule it will recur at the site of operation.

The second case: Periosteal sarcoma (Bloodgood). According to new classification, Osteogenic sarcoma. White



3. Case two. Periosteal sarcoma (Bloodgood) showing new bone formation perpendicular to shaft.

man, age 26, by occupation, farmer. Father and mother are both living and in good health. One brother and two sisters, living and well. Comes to the clinic complaining of rheumatism. His present illness dates back three months when he began to have pain in the left thigh just above the knee joint. This pain has been much worse at night, causing him great loss of sleep. He has lost weight and his appetite is poor. History of childhood, diphtheria when a boy. Pneumonia in 1919. He has always been constipated.

Physical Examination: Temperature 98-2. Normal weight 140 pounds, present weight, 125 pounds. Pulse rate 78, char. good. B. P., S. 110, D. 58. Respiration rate 18, regular. A poorly nourished white man showing signs of pain. The mouth shows many crowned teeth, and general poor hygiene. Tonsils are large, cryptic and contain pus. Other findings; normal except the lower end of the shaft of the femur reveals a thickening which is slightly tender on palpation and feels bony. The mass is symmetrical, that is extending around the shaft of the bone. There is no redness of the skin, no heat, and very little pain on palpation, there is no involvement of the joint and he is only slightly hampered in walking. Laboratory findings: Urine amber, alkaline, 1020, mucous shreds, no albumin, no sugar, few pus cells and few hyaline casts. Blood Wassermann negative. Blood count, W. B. S. 13,900, Heg. 85 per cent, plays 50 per cent, small m 28 per cent, l. m. 19 per cent, eosin, 2 per cent.

X-rays of head, chest and all bones show no metastasis. There are many abscesses at roots of teeth.

Aug. 5, 1924. All teeth showing pus extracted, tonsils removed.

"The palpable tumor you describe as encircling the shaft is apparently larger than the new periosteal bone formation in the x-ray. This is very suggestive of sarcoma. Dr. Kahn and I have just had a case similar to this which has reacted favorable to x-ray treatment." J. C. B.

X-ray treatment, 8-5-24 to 11-5-24, Ma-5 K. V. 180-200, Filter 3 1-4' copper and 1-A. Time 15-20 M. Distance 50-cm.

September 5, 1924. Marked erythema over lower half of thigh, tumor reduced in size, at least one half, by palpation. Sleeps well, appetite good, no pain day or night. His general appearance shows improvement. C. S. L.

"In my last case of periosteal sarcoma, Oliver, which we submitted to x-ray treatment he had a tremendous skin reaction. The soft part tumor broke down, discharged necrotic material and piece of bone, healed, disappearance of tumor. So one must push x-ray." J. C. B.

Patient did well from Aug. 5, 1924 when treatment was started until Dec. 1, 1924, having gained six pounds in weight, free from pain, slept well. The bone tumor had reduced in size. About Dec. 1st, he began to go down physically, headache being chief complaint. A little later diplopia, then choked disc, irregular pupils, vomiting, rigidity of muscles, this condition of affairs grew worse until death Jan. 17, 1925, seven months after the first symptom and four months and twelve days after diagnosis and treatment started. This man was a very active farmer, hard to control. He only remained in the hospital four days with all our advice to remain quiet, and continued his farm work. I believe from the evidence of his early and rapid improvement that if we could have kept him quiet in the hospital that metastasis to the brain might not have occurred. Dr. Cooke, my associate, and I drove ten miles to the home to get an autopsy but we were refused. We did examine the leg frequently during his illness and at death, and we are quite sure that the bone tumor had reduced in size.

Dr. Bloodgood states that the chances of a cure of this case, at his age, by amputation is very small, and I think we are justified in trying to x-ray first.

Case three comes in the classification of inflammatory conditions. 2-9-23, physician age 45, came for relief of pain

in ankle. In early boyhood he injured the ankle playing ball. Since that time he has experienced several spells of lameness. Eight years ago he had an attack of pneumonia. I saw him in consultation. The ankle was swollen and red, giving pain and was a source of annoyance during the active stage of the pneumonia. Within a month he was able to walk without pain. About three months ago he began to have pain and swelling more severe. Had to use crutch and cane. X-ray shows very definite circumscribed areas of bone destruction in the shaft of lower end of tibia, with thickening of periosteum parallel to shaft, resembling x-rays of cases of Brodie abscess that we have had.

The ankle is slightly swollen and red, on palpation the parts are tender and the thickening under the soft parts feel bony.

The blood Wassermann is negative. The urine shows trace of albumin, hyaline and granular casts with leukocytes. White cell count of 10,500, 72 per cent polys. The patient was advised to have an operation for the relief of bone abscess of the Brodie type. Before doing so, however, he consulted two surgeons out of Winston-Salem, one of which cut down and removed a specimen of periosteum for examination: his diagnosis was inflammation. 2-17-23, he returned to me and under spinal anesthesia the lower end of the tibia was opened, evacuating a rather large abscess containing thick yellow pus. The periosteum was much thickened, the abscess cavity was curetted, swabbed out with pure phenol followed by alcohol, the soft tissues and skin closed without drainage. The wound healed per primam. Clinical and x-ray observation of the patient has shown progressive bone repair with good function. At present 6-26-25 the patient is well and doing active work.

Dr. Bullitt, pathologist, reports as follows: "Diagnosis chronic inflammation of bone. Pathological description: sections show numerous irregular trabeculae of bone and considerable quantities of fibrillar connective tissue, some

of which is quite dense and some rather loose meshed. In the connective tissue is a moderate infiltration with leucocytes (chiefly mononuclear). The blood vessels are markedly sclerosed. The amount of exudate is surprisingly little for an active inflammation. There is nothing indicative of tumor."

To differentiate between inflammatory conditions of bone and malignancy is at time a most difficult problem for the roentgenologist. A callus complicated

by osteomyelitis looks much like an osteogenic sarcoma.

The well known criterion for roentgen differentiation is that the new formed bone, lies as a whole parallel to the shaft in inflammatory conditions instead of perpendicular to it as in osteogenic sarcoma.

Central tumors of the bone which are not metastasis or multiple myeloma are seldom malignant. (Codman).

HAS ALCOHOL A PLACE AS A THERAPEUTIC AGENT?*

G. H. MACON, M.D., Warrenton

It appears that we are getting panicky in our denunciation of alcohol. As a result of this unrest, no provisions have been made for that small percentage of patients to obtain alcohol legally for medicinal purposes. I admit that its use in the practice of medicine is limited; but I am also convinced by experience and observation that in certain cases, wisely administered, I have yet to see a drug that I could safely substitute for it.

Recently I had occasion to observe the beneficial effects of alcohol in two desperate cases of labor pneumonia. Both of these cases were addicted to the use of alcohol as a beverage. The delirium experienced by these patients toward the crisis was something fearful—simply wearing themselves out and practically exhausted. The various sedatives were used without giving the desired results; but the most gratifying results were obtained from moderately large doses of alcohol, and I am now convinced that had I not used alcohol with these patients, the termination would have been fatal. Good whiskey was hard to obtain. Opium in the form of morphine was tried and the opiates produced a decided depressing effect upon the respiratory centers in both cases, and whiskey used on both patients

gave splendid results.

In the infectious diseases, when the first sound of the heart becomes feeble, alcohol wisely administered has given me results that I have not been able to obtain from other drugs. In carbolic acid poisoning it is the most efficient antidote that we can use. It prevents the absorption and also dilutes the acid by its astringent and dehydrating action upon the tissues.

In severe types of gastro-enteric intoxication, where the prostration is severe, brandy in thirty (30) drop doses in a child six (6) months old has given me splendid results, when other means of stimulation have failed. In a child suffering from broncho-pneumonia, brandy in half-dram doses every two or three hours has given me the most happy results.

I have seen the most ardent prohibitionist's viewpoint as regards prohibition completely changed after observing the beneficial effects of alcohol in a relative. The attitude of the State in not placing alcohol or whiskey where it could be legitimately obtained has made a man who was once enthusiastic as regards prohibition now luke-warm towards the cause.

When we obtain alcohol illegally, the bootlegger, in his ignorance, is only too glad to pass the word along that Mr. So-and-So is purchasing whiskey, therefore it must be all right to handle it. As

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a result bootleggers and distillers increase instead of diminish.

It is not often that we really need alcohol in practice; but when it is indicated we should not be forced to obtain it illegally. I contend that the State should make provisions whereby it can be procured, and the regulations as to dispensing it should be rigid and strictly enforced, and prohibition would be strengthened.

If alcohol is wisely administered to the elderly who are convalescing from some acute infectious disease, the period of convalescence is shortened, their appetites are improved and it is a great factor in placing them on their feet again.

Alcohol is clearly indicated in poisoning by the cardiac depressants and is one of our most reliable agents in threatened heart failure.

I contend that alcohol is only indicated under certain conditions and under these conditions which I have enumerated I have not found any agent that I could substitute with any degree of satisfaction.

No one wishes to see the saloons return; but I would like to be able to obtain alcohol when it is indicated in a decent legal manner; but under existing State laws this is impossible.

Therefore, I ask the question: Has Alcohol a Place as a Therapeutic Agent?

A STUDY OF CHEMICAL HYDROCHLORIC ACID, ESPECIALLY AS TO ITS PHARMACOLOGICAL ACTION AND THERAPEUTIC USES*

S. M. BITTINGER, M.D., Sanatorium

This is a drug which I think has not received quite the interest and study it deserves in medicine, especially by the internist. Of course, due to its great use in the arts and in commercial chemistry it has been studied in great detail by both scientific and commercial chemists, and its physical and chemical properties and actions have become well understood and correlated with the result that hydrochloric acid is one of our most important chemicals. It belongs with nitric and sulphuric acid, to that great group known as mineral acids, and these three are by far the most important of the group. In this group it is probably superseded in importance by sulphuric acid only. You probably heard the old saying, which still holds true to the present day, that civilization, especially the commercial civilization, of a country can be very well determined by the amount of sulphuric acid which is produced or used in the various industries of that country. Hence hydrochloric acid, which ranks close be-

hind sulphuric acid in importance, is indeed a very useful chemical both in the scientific and commercial laboratories and industries. We will also see that it has a very important, even though somewhat restricted, field in medicine and fills a place which cannot be taken so satisfactorily by any other, even though quite closely related, drug.

Before taking up the pharmacological and therapeutic study of hydrochloric acid, it would be best to study in brief the history of the drug and its preparation and also its physical and chemical properties, as only by a study of these last two subjects can we arrive at a satisfactory understanding of the action and results obtained from the administration of the drug.

I believe that at the present time, due largely to the fact that the field of medicine has become so broad, we often allow our time to be taken up by other studies probably more interesting but often not as important, as the close study of the chemical properties and actions of the materials we use in treatment. Or, putting it in another way, we do not familiarize ourselves with our

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drugs. In the olden days the "doctor of physic" was an experienced chemist as well as therapist. Today the trend is more along diagnostic than therapeutic lines and probably a little too much so.

Hydrochloric acid has been used extensively since it was first prepared in large quantity, and thus in sufficient amount for commercial use, by Glauber in the seventeenth century. It is interesting to know that the method of production as used by this chemist was the same as is used at the present time, namely: the action of sulphuric acid on common salt. The acid occurs in nature in only two places. In the gaseous state it is present mixed with other gases escaping from volcanoes, and in the liquid state it exists in the gastric juice, where it is present in concentration of about two-tenths per cent.

Let us briefly take up the physical and chemical properties. The acid, as above mentioned, belongs to the group of mineral acids. The properties are in general the same. The commercial acid is a clear, and in the pure form, colorless, fuming or volatile liquid, forming, when exposed to the air, dense white fumes due to its union with the atmospheric moisture, as the acid has a marked affinity for water, a fact which should be borne in mind when considering its pharmacological and therapeutic action. In weak solution it undergoes complete dissociation into positive and negative ions.

The gaseous acid is very irritative to the mucous membranes and it is irrespirable. Chemically it is made up of the elements hydrogen and chlorine (a halogen) united in the proportion of one atom of hydrogen to one of chlorine. The acid is a powerful corrosive, but its action is not so extensive as either that of sulphuric or nitric acid; however, its toxicological action is greatly enhanced by the fact that it is very volatile and hence is quickly distributed into otherwise inaccessible places, and thus its action is more widespread.

Not only is this acid very destructive to tissues, but it acts upon most of the

metals, the notable exceptions being gold and platinum.

Passing now from the physical and chemical properties of this acid, we will begin the consideration of the pharmacological action, touching first on the toxicology of the drug. When brought in contact with the living tissue it causes the most severe burn associated with great pain, unlike, in this respect, the action of phenol, which has a distinct local anesthetic action even though very corrosive. When swallowed, the lips, tongue and buccal mucosa are first turned white, but later become brown and rotten. The burn is not so deep as would result from that of nitric or sulphuric acid, not being corrosive as above mentioned. However, due to its volatility the fumes may cause marked inflammation and edema of the larynx, followed by death from asphyxiation, even though none of the acid itself entered the larynx. The pain in the mouth, throat and the abdomen is very severe and instantaneous; swallowing is exceedingly difficult; voice husky; breathing spasmodic, vomiting severe. These local symptoms are quickly followed by rapidly progressive general symptoms of shock, with rapid feeble pulse, general weakness and finally death, the mind remaining clear to the end. If the patient recovers from the acute effect, he may remain subject to stricture of the gullet with loss of function of stomach, thus dying of slow starvation. Or, if the burn and resulting cicatrix be not so severe as to cause immediate obstruction, this may progress slowly, causing more and more interference with swallowing, or cancerous degeneration may become engrafted at site of the old burn.

Death may follow the ingestion of a few drops provided the acid itself enters the larynx; or if quickly swallowed and transmitted to the stomach, death may follow a fluid drachm dose. In rare instances the fatal outcome may occur in two to fifteen hours after the ingestion of the acid, though the usual duration of life is about twenty-four hours.

The treatment for poisoning by hy-

drochloric acid is the same as for all mineral acids. Calcined magnesia is the perfect chemical antidote. Others are prepared chalk, wall plaster, soapsuds or largely diluted alkali, also milk and albumin are given to help dilute and combine with the acid and also protect the mucous membranes as far as possible. Above all, speed is the prime requisite if any good is expected to be accomplished. Passage of the stomach tube or other instrumentation is absolutely contra-indicated, as the tissues are already badly corroded and softened and the passage of instrument is very likely to cause more extensive sloughing and cicatricial formation, or even perforation of the esophagus or stomach.

Let us take up the physiological study of this acid, a study of prime importance to us because, in order to obtain the best results from the administration of this drug in therapeutic doses, we must try to administer it as nearly as possible according to the physiological laws which govern its secretion by the gastric glands. The normal degree of concentration of hydrochloric acid in the gastric juice varies greatly from time to time, being least just before the meal and greatest from about one to one and a half hours after the ingestion of food, and then gradually falling. Also there are many perfectly normal physiological processes that influence the degree of concentration, but in general it adheres rather strictly to this rule.

Hydrochloric acid is manufactured by the parietal gastric glands, being derived from the chloride of the blood plasma, and this chloride is converted into hydrochloric acid by a process probably of hydrolysis or other dissociation, the method of which is unknown at the present time. After the acid is once secreted as such, the normal epithelium is impenetrable by it, but when for some cause the vitality of the epithelium is destroyed, as in anemia, or after partial occlusion of the arteries, the acid may penetrate the cell and cause digestion of the gastric wall. Hence the dangers of a prolonged hyperacidity due to whatever cause.

We will now take up the functions of hydrochloric acid and see how important it is in the gastro-intestinal economy. Let us divide its functions into those that are physiological and those that are biochemical, both of which are very important and necessary. The former are shown by the control of hydrochloric acid in the movements of the stomach and the opening and closing of the pyloric sphincter, and I should say here that the opening and closing of the sphincter is not, as was thought up to a short time ago, due so much to the influence of the acid, but rather to a neuro-muscular mechanism as yet not completely understood. Also under the same division of function, the acid, after entering the duodenum, influences markedly the secretion of bile and pancreatic juice.

Under the latter division of function we have, first, the assistance of the pepsin in the digestion of proteins. Pepsin will not act, or only very slightly, when the acid is absent as in achylia and the optimum action is only obtained when the concentration of acid approaches the normal limits. Second, it brings about, to a certain extent, an inversion of the disaccharids. However, this is of no very great importance. Finally, but not least, it has a very distinct antiseptic action on the gastric contents. It is claimed that the chyme from a normal secreting stomach is usually sterile, there being only a few bacteria able to withstand the bactericidal action of the acid. The tubercle bacillus is one, and the spores of those germs capable of producing them. However, more recent work has shown that tubercle bacilli are very resistant (due to their fatty capsules), nevertheless they are greatly diminished by their passage through the stomach, and when the concentration of the acid falls below the normal, then various bacteria and yeasts start their growth, followed by evidence of fermentation and formation of irritating organic acids and gases.

This antiseptic action, I am sure, has not received the attention it deserves by most of us. When we administer the

drug we do so with the thought in mind of its physiological action, and the first two biochemical properties. This latter function, however, is very important and is more and more receiving the attention it deserves. Thus we see what an important agent hydrochloric acid is in digestion, and that, as long as the acid is secreted in proper concentration, so long will it carry on its functions to the benefit of the gastro-intestinal system directly and the body as a whole indirectly. When, however, from whatever cause, the acid is put out in greater or less concentration than the normal, sooner or later we are going to have altered function, or symptoms arising, which may become very marked and have a deleterious and far-reaching effect.

In certain diseases, both local and general, the amount of acid is increased above the normal, while in other diseases the opposite occurs, even to a complete lack or an achylia. I shall not take up time in enumerating or discussing the diseases or conditions in which the hyper-acidity exists; they are familiar to all of you.

In taking up the conditions in which the acid is diminished, or absent, let us divide them into local, or those in which the lesion is in the stomach itself or neighboring viscera; and general, in which the low or absent hydrochloric acid is more a symptom of the general disease, sharing with the rest of the body the effect of the toxemia or asthenia, with resulting inhibition to a greater or less degree of the acid secretion.

Of the local conditions, the first and one of the most important is malignancy, especially when it is complicated by obstruction. In ulcer, where obstruction is also present, the gastric analysis may show a decline from a hyper-acidity to a condition of achylia as the cicatricial stenosis slowly intervenes, and especially when malignant degeneration becomes superimposed upon the ulcer bed. Also there is a low acidity in the so-called chronic gastro-intestinal catarrh and even in a localized chronic gastritis. In these conditions there is

more or less atrophy of the secreting glands, together with the general atrophy of the gastric epithelial lining. This latter atrophy is often seen in the stomach of old alcoholics and is often associated with the chronic catarrh seen in cases of visceroptosis. We see achylia or hypoacidity in certain functional diseases in which the lack of secretion seems to be due to a vasomotor disturbance, and is usually associated with hypomotility, or I might say gastric inertia. There are other local diseases in which hydrochloric acid is diminished or absent, but these I believe are the most important and will serve to emphasize the direction in which the paper points.

In taking up the general and constitutional diseases associated with hypoor a-secretion of hydrochloric acid, we will find that they are many and some of them exceedingly important. The most important are the acute and chronic infectious diseases, as typhoid, pneumonia, and tuberculosis. The latter I wish to take up more in detail toward the end of this paper. In these conditions there is to a greater or less degree a catarrhal condition of the mucous membranes which affects the secreting glands also, and, of course, diminishes or abolishes their function. In case of acute infection this inhibition may be only temporary and recovery of function will follow the clearing up of the exciting cause. However, in the chronic diseases more or less permanent damage may be done to the secreting glands, they being often replaced by fibrous tissue following atrophy.

We often see a low acidity, at least, in the chronic gastro-intestinal catarrh, which is more or less always present in the chronic cardio-renal diseases when decompensation of kidneys or heart, or both, set in. This is largely due to chronic passive indigestion of the mucosa associated with atrophy and finally fibrosis also of the glandular cell. Again we see this low or absent acidity in any chronic wasting disease, as in cancer of other organs or parts of the body or in diabetes, and in some chronic nervous

diseases.

In chronic secondary anemia there is more or less hyposecretion of the parietal glands, due to lack of proper blood supply, and often this may finally lead to actual atrophy, with more or less permanent insufficient glandular secretion.

This hypo-acidity is often seen in cases of sprue. Recently there has been brought to my attention an article gotten out by Dr. Claiborne T. Smith, one of the internists connected with the Park View Hospital at Rocky Mount, N. C., on the treatment of that severe anemia, often resembling actual pernicious anemia, which occasionally occurs during the puerperium, by the use of large doses of hydrochloric acid in association with the use of hematinics. In these cases very marked improvement and final cures were obtained, and the author seems to think that the hydrochloric acid was a very important factor. In that very interesting and fatal disease known as pernicious anemia the secretion of hydrochloric acid is greatly diminished or absent. In fact, practically all cases of pernicious anemia show a complete achylia, either throughout or at least during some stages of the disease. The achylia may antedate the onset of the classical symptoms and blood picture of Addisonian anemia by as much as five to ten years. Indeed, the absence of hydrochloric acid in the gastric juice is of great value in the diagnosis of this condition.

The symptoms of hypoacidity or achylia are in the main gastric in type, but often influenced, of course, by the primary disease which at times is somewhat confusing. One of the main symptoms is gas eructations with epigastric fullness and discomfort, often amounting to actual pain. However, the pain is not so localized as in ulcer, often being rather diffuse over upper abdomen. Complaints of heart palpitation, and nausea and vomiting are not uncommon with spitting up of food. The onset occurs at variable times, after meals, worse with carbohydrates which readily undergo fermentation. Occas-

sionally we have heartburn, but it is usually not so marked as with hypo-acidity, also not so much discomfort or pain and not relieved so readily by alkali. Again the signs of organic diseases are usually absent, except in the case of cancer or other local disease of the abdomen which are associated with the low acidity. However, it not uncommonly happens that the diagnosis of achylia or hypoacidity from some organic abdominal lesion is not at all easy, and we will often have to go through all our diagnostic methods to determine the real state of affairs. Of course, we are greatly helped by the existence of the exciting disease, whatever it is.

Another symptom which I have not mentioned is a chronic, often intermittent and rather intractable diarrhea which, in our experience, is a very common symptom or result of the low or absent acidity. The occurrence of this diarrhea can be readily understood as resulting from the poor digestion associated with the lack of hydrochloric acid in the gastric juice and also the absence of proper bactericidal action. We have noticed this diarrhea especially in our work here, and now do a routine fractional analysis on patients presenting this symptom, even when there are no gastric symptoms as such existing.

There is no doubt in my mind that there are a great many cases of achylia that go unrecognized, and, in fact, often the symptoms are practically absent or so insignificant, or are overshadowed by the primary disease, as in tuberculosis and other infectious diseases.

In taking up the treatment of achylia we can see that, while in a sense hydrochloric acid has a rather restricted place in therapeutics, it is of great value in the systematic and curative treatment of many dissimilar diseases with gastro-intestinal manifestations.

In our work in the field of tuberculosis we are at once struck by the many gastro-intestinal symptoms that arise during the course of this disease, often when no demonstrable tuberculous gastro-intestinal lesion is present; for, as

you know, while intestinal tuberculosis is common as a complication of the pulmonary lesions, a tuberculous gastric lesion is very uncommon, and in the few cases reported in literature it has been usually present, at least in some of them, in those cases which hydrochloric acid was lacking or present in only slight quantity. However, symptomatic gastric symptoms are very common; in fact, one of the most common of all the manifestations of tuberculosis; and we have found from our routine practice over a number of years of doing a fractional gastric analysis on every patient complaining of symptoms pointing to the stomach and intestines, that the great majority of those with at least moderately advanced or far advanced tuberculosis have a low hydrochloric acid concentration, often amounting to complete achylia. We also do a gastric analysis on all cases of chronic diarrhea. Of course, these analyses are done with the further purpose of differential diagnosis from some local or general disease which is suspected.

We also have been aiding our diagnosis and treatment of pernicious anemia and other conditions which come to us for study. While our work is largely directed toward the field of tuberculosis, many non-tuberculosis conditions come to our Sanatorium both for differential diagnosis and as complicating affections, and we must handle these cases also, even the non-tuberculous ones for a certain time. I feel that often failure of physicians to obtain proper results from the administration of hydrochloric acid is due to the fact that the case has not been studied thoroughly, both as to the existing cause and proper diagnosis and again to the degree of impairment of the gastric secretion. So often the dose of hydrochloric acid has been so small as to be inadequate. In order to obtain the best results the administration of the drug should approach as far as possible the physiological laws governing the secretion of the acid. By the fractional gastric analysis we can best determine this.

Here at Sanatorium we use the ordi-

nary Rehfuess tube and the ordinary test breakfast. Specimens are removed at fifteen minute intervals and titrated for the free hydrochloric acid. Usually we attempt to obtain from eight to ten specimens at a sitting if the condition of the patient warrants it. After the series of titrations are finished by means of a formula, the deficiency of hydrochloric acid in each specimen is determined, and then built up to the known proper hydrochloric acid concentration, or as near as can be determined. The patient is then given the thus obtained approximate proper dosage at regular fifteen minute intervals after each meal. In some of these cases, especially when the hydrochloric acid is entirely absent, the total amount of acid given is enormous. By this method we have obtained much better results than when giving the acid by the usual hit and miss method, even though the latter is beneficial at times and, of course, easier to carry out and does not cause so much strain to the patient, which, of course, has to be considered. However, I do believe that part of the good results obtained by this method is not due so much to the way in which it is given, but more to the fact we can so well determine the degree of deficiency and thus bolster it by the proper dosage.

The disease in which we have had most experience in treating the hydrochloric acid deficiency symptoms is tuberculosis, and we have recently been using the drug more extensively possibly than ever before, being stimulated to this by some recent work in which the bactericidal action of gastric hydrochloric acid has been emphasized and the theory advanced that by the use of the drug in hypoacidity the so-fatal complication of tuberculosis enteritis might at least be partially prevented or the incidence lessened, not only from the direct action of the acid on the tubercle bacillus, but more on other fermentative organisms toward which it is a very active germicide, thus preventing or diminishing fermentative processes which cause irritation to the intestinal mucous membrane and thus pave the

way for lodgment and invasion of the intestinal mucosa. Even in cases of actual tuberculous enteritis, in which the outcome is usually unfavorable, the distressing symptoms are often ameliorated at least. In fact, we have had cases which exhibited very suspicious symptoms of tuberculous enteritis which had on analysis a low hydrochloric acid concentration and by administration of the drug the symptoms of enteritis would clear up.

In cases of simple symptomatic indigestion with anorexia the appetite improves rapidly very often and the symptoms clear up, which is often of great benefit to the tuberculous patient, as those who have a good digestive apparatus improve faster than does the patient whose digestion is poor. We often combine a bitter tonic or an alkali before meals with the acid, after meals occasionally giving the acid and pepsin together because there is every reason to believe that if the parietal glands are incompetent the peptic glands may be so.

Another class deserving consideration is that made up of cases of chronic diarrhea, as above mentioned, which show no organic intestinal lesion as such, and no parasites or causative agents can be demonstrated in the stool. On gastric analysis there is often found a hypoacidity or complete achylia. These cases may be called achylia diarrhea. By the use of the hydrochloric acid the distressing diarrhea often clears up, or certainly improves to a great extent.

In pernicious anemia and in the severe secondary anemias, both due to the infectious diseases and following the puerperium as mentioned above, or of cancer, sometimes great benefit is obtained, and in those in which the cause can be determined and removed the hydrochloric acid medication is of distinct aid in restoring patients to complete recovery. It is a well known fact that often the shortest way to good health is by way of the stomach, which is a much truer saying than we sometimes realize. It is of great value in the acute infectious diseases and is not used nearly so much

as it deserves. While in most cases, as you will note, hydrochloric acid is not a curative drug, as is quinine in malaria or arsenic and mercury in lues, it is specific in those gastric symptoms due to the lack of the proper hydrochloric acid concentration of the gastric juice, resulting from whatever cause, either local or general. No other acid, as nitric or sulphuric, nor any vegetable acid will take the place of hydrochloric in the gastric juice.

In concluding, I wish to emphasize the fact that hydrochloric acid deserves a higher rating and more extensive use in the treatment of disease. Its advance to the front will be more rapid as we learn more and more concerning the best way to administer it in proper dosage, and improve our understanding of its pharmacology and therapeutic action.

A MEDICAL BOARD SUSTAINED

The average state board of medical examiners usually has a hard time getting rid of the black sheep of the profession. There are so many to appeal to, and it is about as difficult to run out of the profession a man who is no longer deserving, as it is to get a bad policeman fired from the force, or a disreputable lawyer disbarred. The supreme court of our neighbor State of Washington has just rendered a decision that will please all reputable members of the profession. A woman doctor named Russell was convicted some ten years ago of the crime of abortion. Later in the year, after a hearing before the board of medical examiners, her license to practice medicine was revoked. About a year after the revocation of the license an easy governor issued a pardon to the lady. This she seemed to think removed the stain from her character and she applied to the board of examiners to reinstate her. This they refused to do. They repeatedly refused, so she went into court to enforce the point. The trial court heard the case on its merits and ordered the board to reinstate the litigant. Instead of doing that they appealed to the supreme court of the state, and that court reversed the lower court, and the applicant is still out in the cold. It would seem that a righteous decision has been given to replace an unrighteous one. Without knowing what the arguments were advanced to the trial court for a reinstatement of the applicant, we can at least feel gratified that the board of examiners has been sustained.—*Medical Sentinel*.

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*A journal for the promotion and diffusion of
usable medical knowledge.*

Publicity for the Doctor of Medicine and Other Trust-worthy Ministers to the Sick

Beginning with this issue Professional Cards of doctors will be carried in this Journal. This is a part of the policy as outlined in our initial issue in the statement, "we are in favor of extension of the field of honest, direct professional advertising."

Opposition to this innovation has been anticipated; but, so far as it has come to our attention, it has amounted to much less than would have been guessed. This divides itself into several classes.

First to be mentioned is that made up of fine old gentlemen living mostly in the past, when many, while deriving their livelihoods from farms or investments, studied medicine in order to enter one of the "learned professions," and to qualify for positions among the *intelligentia* at the county seat.

Another class is that which, having arrived at a degree of prosperity with which it is content, and having in the back of its mind a vague idea that a change in policy as to publicity *might* alienate a few, stands pat.

Some others of our ablest and most estimable members just do not like the idea, and have not considered very carefully the fact that the advertising of a private hospital is nothing but a more elaborate advertisement of the doctor.

Still another class includes those who exhaust every possible indirect means of advertising, but frown prodigiously on their brother who comes out honestly in the open and inserts a card in a journal which goes out to medical men telling them, among other things, where may be found men who can minister in various ways to the needs of the various portions of a patient's anatomy.

This plan embraces several further steps. We want to be on more intimate terms with others who have to do with those who are not in health; notably the dentists and pharmacists. By carrying cards for these we identify them with the medical men who make up the vast majority of the readers of the Journal; and, at the same time, give the members of each of the professions information which they may need in the conduct of given cases in the best interest of the patients.

We would further advocate the carrying of a Nurses' Directory and a Directory for experts in massage. Every city needs a certain number of men nurses. Certain classes of cases can hardly be treated without their services. Many patients must be sent to distant institutions because of this lack.

If doctors generally knew and had it brought to their attention each month, that they could readily obtain the services of an expert in massage and other manipulative measures of therapy, for patients in whom these were indicated, these measures being carried out under the direction of the doctor, there would be a great lessening in the number of patients who seek the ministrations of the chiropractors and other ignoramuses and frauds.

It seems that there is a considerable impression that, as the Englishman says, "It isn't done." But it is done in the official Journals of the State Societies of,—to mention those which will

show how the practice prevails from East to West and from North to South, —Rhode Island, Ohio, Indiana, Iowa, Kansas, Oregon, Washington, Kentucky, Arkansas, Mississippi, Louisiana and Texas. And these are by no means all.

What kind of men carry these cards? Dr. Rudolph Matas, of New Orleans, president-elect of The American College of Surgeons; Dr. Scheppegrell, probably the world's greatest authority on Hay Fever; Dr. John D. Dunham, Professor of Medicine in the State College of Ohio; Dr. C. L. Bonifield, Professor of Gynecology in the University of Cincinnati; and Dr. Edward H. Cary, of Dallas, recently President of the Southern Medical Association.

North Carolina has a peculiar need in this regard. Having no school conferring the degree of Doctor of Medicine, the graduates who come in to recruit the ranks of the profession cannot have gained any considerable first-hand knowledge of the specialists in this State, and so, when a patient is in need of services which he regards himself as unable to render, he naturally thinks of one of his teachers and refers the case accordingly.

Would it not be well to let him have truthful information on this point? And would it not be better to do our advertising openly in the advertising columns of reputable medical journals to the confusion of those who, by devious, surreptitious means, contrive to infest the lay press?

William Walton Pharr

In the early morning of Independence Day Dr. Pharr died. For several months he had been in a state of marked decline; so the end was by no means unexpected. His passing leaves one less in that lovable and irreplaceable group of older family physicians. Brought up in an intellectual atmosphere, it was but natural that he should turn to a learned profession rather than seek his

livelihood in one of the utilitarian pursuits.

There was in him no pretense, no ostentation. A keen sense of the limitations of all knowledge made him a conservative who sought to have evidence before accepting assertions. He did not chase will-o'-the-wisps, but was always glad to hear any new thing, when properly supported by reliable testimony. Many more honors had come to him than commonly is the portion of the modest and retiring, and not the least of these was the presence in his funeral of a great gathering from all the walks of life, testifying to the esteem and affection in which he was held by those to whom he had ministered and among whom he was known by his walk and works.

The Voice—and the Hand—of Jacob

There is being sent out from Hamburg the "American News, The Only American Newspaper printed in Central Europe." We are in receipt of number 18, of Volume 4. According to its caption its motto is, "The Truth;" but the text of the front page gives abundant proof that this is not taken very seriously by those making the profession.

Two columns and more are given to proclaiming the magical virtues of "Perbion": "Happy Tidings for Suffering and Dying Humanity" are brought to our shores.

This wonder-worker is announced as the discovery of a highly trained German chemist and many years are said to have been devoted to "scientifically experimenting on men, animals (sic) and plants." "Withered plants regained their freshness; the coloring of their blossoms became more vivid than when they had just opened. Horses, dogs, cattle, animals at the Zoo, fish and other aquatic creatures suffering with various ills when treated with the water regained their former vigor."

The Socratic method is made use of in order to give the reader to understand that the manufacturers of this boon to mankind are the most ingenuous as well

as the most ingenious of mortals. We are repeatedly told about "German thoroughness." The "wonder water accomplishes its results by activating the cells!" "No matter what the ailment, —stomach trouble, kidney and intestinal disease, *inflammations of all characters*, faulty metabolism, syphilis, headaches, loss of hair, *senility*, nervous, skin troubles, mental and physical breakdowns, readily yield to this water, and in a half period a cure is established."

Is this not a flattering tribute to American intelligence? But, before you indignantly resent the implication that we could possibly be led into believing such childish nonsense, consider what dupes they have discovered us to be heretofore, and the small chance of the leopard losing his spots.

It has been noted in these columns how gladly the American people received Friedmann, coming entirely unvouched for, and making claims almost equally preposterous.

Then consider the case of Aspirin; a drug introduced to us by our German friends as a substitute, on the one hand, for sodium salicylate, and, on the other, for acetanilid; and touted as being productive of all the beneficial effects of both, with not one of the evil potentialities of either. Further, mark you! the drug was put on the market under a trade name having no relationship to its chemical structure, nor to its alleged effects. (It is assumed that no man in medicine is silly enough to believe the utterly asinine assertion made in one of our popular dictionaries that the name is derived from *Spiro*—I breathe).

The evidence is overwhelming that, in its very inception, the plan was to introduce the drug through the medical profession, induce its members to vouch for it as an agent which would cure rheumatism, without upsetting the digestion; and end all sorts of headaches, without depressing the heart. Having succeeded in introducing the drug into hundreds of thousands of homes through the doctors, while *directly* advertising only through medical publications; the mask was thrown off; adver-

tising was instituted in the lay press; and then it became clear why the *meaningless* but *easily remembered* trade-name was given it.

It is not clear just what the backers of Perbion intend to do to hoodwink the doctors and prey on their patients; but we can be well assured that we are somewhat in the state of the old setter being led out to be shot: "She didn't know what was going to happen to her, but she jolly well knew it was something unpleasant."

If the publishers of the "American News" of Hamburg, Germany, sent this copy of their sheet to this Journal for editorial comment, they may say that they have accomplished their object—after a fashion.

What a pity Ponce de Leon passed off the stage before the arrival of the "Expert German Chemist!"

The Going of Doctor McNairy.

News of Dr. McNairy's dismissal was published a month ago. Seldom has the going out of office of a political appointee been attended by as unusual happenings. Those who have been under his institutional care, and his neighbors in the town of Kinston attest their grief and sympathy, in their several ways. The town's-people express their unlimited confidence and invite him to take up his abode among them: his pitiful wards lift their voices in pathetic but unavailing protest.

The editor does not know of any sinister influences behind this action. Dr. McNairy has to say only that he bespeaks the whole-hearted support of the doctors of the State for his successor, and pledges his own in advance. Surely this is an additional evidence of his own worth, and makes it even more difficult to understand why it was found impossible to make adjustments for the retention of a man who stands so high in the esteem of men prominent in the line of work to which he has devoted the greater part of his professional life, who has the confidence of his neighbors, and who holds the affection of his afflicted charges,

"Public Welfare Progress," published by the North Carolina State Board of Charities and Public Welfare, and "Charity and Children," of the Thomasville Orphanage, heartily testify to their high estimate of his ability and fitness, and their deep regret at his going.

The Board which dismisses him from office says only kind things of him; which brings to mind the almost forgotten lines:

"You say that you love me so dearly;
Then why did you kick me downstairs?"

No one can go through the North Carolina Training School for Feeble-minded

Children and not have his heart wrung at witnessing the plight of those there being cared for, and reflecting on the anxious waiting in the homes of the State for news that their little ones are responding to treatment, that the clouds are lifting from their lives, and that they give some promise of developing into something approaching to the normal bright and happy child.

We can only trust that the mantle of office falls on competent shoulders and that Dr. McNairy's lines are fallen in pleasant places.

DEPARTMENTS

MENTAL AND NERVOUS

JAMES K. HALL, M.D., *Editor*
Richmond

Democracy and Teaching.

The state is a corporation. The citizens of the state constitute the stockholders in the corporation. They bind themselves solemnly together by laws, they impose duties and obligations upon themselves, and to the end that they may be able to perform their duties and to meet their obligations they collect from themselves money in the form of taxes. With these monies they are enabled to secure servants for themselves and for their children. Some of these servants, by reason of unusual aptitude and special training, are able to do for the citizens and for their children what the citizens themselves are often unable to do. In this group of servants of the state, selected by the citizens, are many highly trained, skilled professional individuals, including teachers.

There would seem to be no reason for doubting that the stockholders of a corporation have the right to employ, to catalogue the type of service expected of an employee, to fix the remuneration and to discharge the employee if the

service be inadequately or improperly performed. The teacher in a school of the state is a servant of the state. Surely such a teacher, if his work be unsatisfactory, may be discharged. He may be prosecuted, convicted, and properly punished, if he engage in criminal behavior.

But a corporation, even the state, has not the moral right to do certain things. It is without the moral right to inflict cruel or unusual punishment, yet it reserves the legal right to rob an individual of life. The state is without moral right to do a foolish thing, although it may be legally permitted to stultify itself.

The finest, the most fundamental, the most delicate and difficult work engaged in by the state is education. The development of the mind constitutes education. Teachers do not create the process; they only help it along or hinder it. In a normal individual education is taking place all along until the decay of old age sets in. Some illiterate people are rather well-educated; some highly literate folks are fundamentally ignorant. Stuffing the mind full of facts does not constitute education. I think that being educated means being acquainted with the ways of nature. The

latter term embraces everything in the Universe, including God. But Nature is one thing; some individual's interpretation of Nature may be quite another thing.

Definite laws must prevail in creation, otherwise chaos would come. Little is known about those laws, either as to their origin or their methods. Absolute facts about them are scarce. Theories about them are many. Evolution may be a fact, established in the animate and in the inanimate world. As a fact, little is known about it. But certain theories with reference to the meaning and the scope of evolution are satisfying to many eminent men in their search for things as they are. In the domain of chemistry, for example, many obscure matters are satisfactorily explained on the assumption that atoms and molecules exist. But the existence of these tiny particles of matter is to-day theoretical only. In the science of physics theory is made use of in explanation of that form of energy referred to as gravity. Electricity is an obscure field in which definite facts must be few, but well-formulated theories make possible the safe and efficient manipulation of that mighty form of energy.

Theory constitutes for the individual the tentative and the plausible explanation of the unknown. Without the stimulation and guidance of theories the scientific world would be helpless. The Darwinian Theory with reference to the ultimate origin of living things is rather too much for my full comprehension of it, but I am of the opinion that belief in that theory should not constitute a crime, or the teaching of it a bad thing.

The pronouncement that we have lately been engaged in a struggle to make the world safe for democracy has never made much appeal to my enthusiasm. We ought to be constantly concerned about the possibility of making ourselves fit for a democratic type of government. There is nothing sacred about the rule of the people. If they be ignorant, majority rule will increase the degree of their ignorance, and their con-

sequent unfitness for the exercise of the franchise. But legally, if not morally, the people in a democracy must have the right to submit themselves and to subject themselves to the dominance and the destructiveness of their own ignorance. The finest duty of a democracy is to fit its citizens for habitation in a democracy.

No one can teach another. The teacher can only arouse enthusiasm, awaken aspirations, and direct individual effort. Each individual must solve the problems of life for himself, or else become a sponge for the absorption, without assimilation, of the ideas of others. Becoming educated must mean the searching for the truth of things as they are. A democracy must have the legal right, however ignorant it may be, to formulate the course of study in its own schools. But if the state should undertake to handicap and to hamper teachers in their efforts to know the truth then that state would start backward into medievalism. The fear of the masses is, perhaps, that their own misconception of the laws of evolution may be taught to their children. That would undoubtedly constitute dangerous teaching.

Shall the taxpayers of the state be allowed no voice in the matter of the quality of the instruction imparted to their children? Shall the teacher, in accepting a position in a public school, depersonalize himself, and become an inert medium through whom instruction is offered by an ignorant citizenship? Those are the issues at stake in a neighboring state. They constitute grave and solemn issues. Wisdom and patience and tolerance are called for if the solution is to be sensible and just. The average theologian is biologically ignorant; the modern scientist is often arrogant. The ecclesiastical statesman should bear in mind that science recognizes no mysteries, and the scientist should read the 38th and some of the following chapters of Job and remember that inherent greatness and humility are close akin.

June 29, 1925.

Man's Inhumanity to Man.

At least two guards in a prison camp in North Carolina have lately been convicted of having brought about the death of a convict by a murderous assault upon him. And in other camps and prisons there are not infrequent tales of at least brutal harshness to prisoners by some of those placed in authority over them.

There must be inherent in man some quality which enables him to obtain pleasure by the infliction of suffering upon his fellow. In a peculiar type of perversion this is known to be a fact. But in the normal person, if such there be, a dog fight, a cock fight to the death, a fist fight, probably arouses pleasurable sensations. The growing boy certainly gets pleasure out of doing to death some luckless insect or animal. The veneer that civilization and culture place around him conceals, but it does not eradicate, this pain-inflicting instinct. In the olden days captives in war were frequently tortured; prisoners were made to undergo suffering; a public hanging drew forth a holiday crowd, not in support of the majesty of the law, but to enjoy the pleasure that came to its members from seeing the luckless wretch writhe in the death-agony. If the hunter be honest he will probably have to confess that his pleasure comes from the actual killing of the game, whether it find a place on the table, whether it be stuffed and mounted and labeled and placed in a museum, or whether the carcass be left to rot in the wilds. Killing probably constitutes the most fundamental and universal satisfaction known to mankind. And the killed thing suffers pain. And that pain of the wounded and dying the killer enjoys. Do you doubt it? Lock yourself in your closet, question yourself and emerge from the closet—a cruel but a truthful man.

Recorded history is little more than a thousand authentic tales of man's terrible brutality to his fellowman. Man is an animal. The civilization that now encompasses him round about is often too ethical and too refined for his real be-

ing, and he must occasionally satisfy his primitive instincts. During such outbursts, sometimes within a second, the unbridled individual is retropelled through thousands of years of civilization, and he is again for a few minutes only a cruel guard in a prison camp, a warrior warming his hands in the fresh-drawn blood of his enemy on the field of battle, the street urchin in a rock-battle in the alley, the little boy dismembering the live June-bug, the great hunter on the African plain shooting down wild beasts in order to see them die.

We are all not so much unlike as we are alike.

The Assassination of Doctor McNairy.

Those in authority have assassinated the headship of the Caswell Training School for the Feeble-minded at Kinston with a suddenness and violence and completeness in keeping with the doing to death of the late Julius Caesar. The same sort of attempt will undoubtedly be made by the dominant political crowd to justify the fatal assault that Brutus and his fellow-gangsters made for their fiendish deed—the good of the state.

Was Dr. McNairy not a well man? So was also a late President of the United States for many months before the conclusion of his term of office, and during that period the present Governor of North Carolina was an office-holder of the Federal Government. Yet no one heard from the present Governor of North Carolina any suggestion that the Vice-President of the United States should assume the duties of Woodrow Wilson. Has a deficit been discovered in the treasury of the Caswell Training School? The present Governor of North Carolina was an official member of a Federal administration during the period of which more money is believed by many to have been wasted than was exchanged for legitimate service and goods. Has the Governor of North Carolina ever lifted his voice against that extravagance either in criticism or

in an effort to measure the depth of the financial debauchery? Hardly. No one with any gumption believes that Dr. McNairy is otherwise than profoundly honest. He would neither steal nor default if he were keeping books for a gang of Chicago thugs.

Dr. McNairy was much more than the medical superintendent of a nascent state institution. He was a missionary, and he moved about over the state preaching about the problems presented by the feeble-minded with the same zeal and forgetfulness of self that the Apostle Paul exhibited in his missionary tours. The assassination of the great Apostle has never reflected credit upon those who detached his spirit from his body; nor did the deed seriously retard the work which he had set going with such powerful momentum. So may it be with McNairy.

I have heard nothing from McNairy, his friends, or his enemies, if he have any, about the cause of his demotion. It is probably true that he has been made to walk the political gang-plank. If so, those who caused his feet to take the fatal steps should be made to answer for it. I believe that a former board of directors selected for the Institution a medical assistant. Friction came. Probably through the encouragement of a divided board the Institution became two-headed. If that be true a mistake was made by the directors. The medical superintendent of a state institution is made legally responsible for the type of medical work done in the institution. For that reason, and for all other reasons, the superintendent should have sole authority for the selection of the medical staff and he should have authority also for removals from the medical staff, for cause.

I read that the Governor has constituted a commission for the purpose of ascertaining what the Caswell Training School is for. That seems to be a curious thing—years after the school was established. It would be only a little more strange if he were to organize a commission for initiating an investigation for the purpose of bringing to light

the reasons underlying the establishment of the State Supreme Court, or the American Tobacco Company, the boundless generosity of James Buchanan Duke, or a body to delve into the personality of Tom Bost in an effort to understand why he writes only what everybody is anxious to read. Why did the same gubernatorial sword which rattled so harmlessly in its scabbard in Raleigh descend with such a deadly swish in the suburbs of Kinston, on the neck of a doctor, too, who had only been trying to make himself the father of a lot of little, partially-mindless, helpless children? The waves and the wind and countless echoes ask Why? Why? Why?

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*
Charlotte

Prevention.

What do the readers of this Journal want under the Department of Dentistry? Suggestions or questions would help. The object of this monthly appearance is not for personal fame or profit but to aid the professions of Medicine and Dentistry in their service to humanity. Are you interested?

If your house is on fire your immediate interest is to put that fire out, and not plan fire proofing improvements.

Focal infection is the fire in the human being and must be extinguished, but there are many little beings, not yet afire. In our anxiety over the more immediate emergency we must not overlook the methods of prevention that may be used to avoid further conflagrations.

With special reference to dentistry the care of children's teeth is the most neglected of all fields. By children's teeth we mean the teeth of infants on up to the age of 16 or 17 when the child usually begins to care for himself.

And this early neglect of children's teeth primarily is the responsibility of the physician, for the dentist rarely sees the child till the damage is done, till the child has toothache, till the child has infected pulps and abscesses.

The dentist is to blame also, because he is fighting the fire, but he does not get the opportunity at prevention that the physician does.

The time to begin the care of the teeth is at least soon after their first appearance, usually long before the dentist sees them; that is, at about two and one half or three years of age of the child. If at this time the natural faults, pits and fissures of the temporary teeth are filled, and the parent instructed in mouth hygiene by both dentist and physician, the chances are most favorable for freedom from tooth troubles until the appearance of the permanent teeth. A few visits to the dentist, the avoidance of pain to the child, freedom from infection, a normal complement of teeth for mastication at a period most vital for development, is real progress toward prevention.

The histology and anatomy of the temporary and permanent teeth are very much the same. In development, certain faults, pits and fissures, often remain, in both sets of teeth, especially the molars and premolars. There is no caries at first. But due to the fact that these pits and fissures extend through the enamel and expose the dentine, decay soon begins. Proper and careful treatment of these, eliminates one of the principal sources of dental trouble. There are other conditions more difficult to control but the early care of both the temporary and permanent teeth is one great step.

As the permanent teeth erupt they require the same early attention. This should begin at about the sixth year, the first school year. The importance of this care has been recognized by the North Carolina State Board of Health as well as other agencies over the country, by their aid in the establishment of dental clinics in certain schools. But these school clinics are only a drop in the bucket. They are so general in their service that even the statistics gathered from their records are of little value except to indicate the quantity of work done. One school dentist over 12,000 children is really fighting fire and should

not be classed as preventive.

So after all the real dental prevention campaign is being carried on by the public health nurses, medical nurses with slight or no training for this character of work.

SURGERY

A. E. BAKER, SR., M.D., *Editor*
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Hematemesis.

Hematemesis is of special interest because of the varied pathology which may be the etiology. At times it is a most difficult problem to make a differential diagnosis, as to the origin of the bleeding; so often the pathology is outside of the stomach with no history or symptoms to indicate the tissue involved. Even the x-ray and laboratory may fail to be of assistance.

Reviewing the literature on this subject we find that 75 per cent of hemorrhages are extra-gastric and 25 per cent are intra-gastric.

In a recent issue of the *Lancet*, a paper appeared by Dr. Sherren on "Acute Hematemesis and Melena" in which he states that: Clinically the cases fall into two groups, those of persons who have been in good health, and those of persons with a history of digestive disturbance. The first are the more difficult to deal with from all standpoints. These include cases of acute gastric ulcer and those of adults of either sex who, without warning, vomit a large quantity of blood or have a fainting attack and pass altered blood by rectum.

In the second group hemorrhage is a complication which follows months or years of abdominal ill health. Sherren considers it a grave occurrence; some of his patients have died of hemorrhage while awaiting operation. Acute hematemesis is only about half as frequent today as it was ten years ago, despite the fact that the number of peptic ulcers treated has increased 50 per cent.

Cases of acute hematemesis and collapse should be treated with morphine and warmth. The risk of exploration

is much greater than that of efficient non-operative treatment. As soon as possible, a working diagnosis must be made. Among the causes, besides acute ulcer, are simple tumors of the stomach, disease of the spleen, early pulmonary tuberculosis, and blood diseases.

Infective foci should be treated and the patient kept under observation. When every investigation brings a negative result an abdominal exploration is indicated. Of sixty-three cases in which an exploration was done, definite disease of the appendix was found in twenty-nine and cholecystitis in fifteen. In other cases in which exploration was negative the postmortem examination revealed an acute ulcer. Sometimes this ulcer was very minute.

Hepatic cirrhosis as a cause has not been common in Sherren's experience. It occurs in carcinoma of the stomach and in splenic anemia (including Banti's disease).

Melena may occur in persons in perfect health; usually under such conditions the subject is a man. Immediate treatment should be followed by thorough investigation, and exploration should be undertaken if no external cause is found. Gastrojejunostomy should never be performed in the absence of a demonstrable lesion.

In cases with a history of indigestion and in which a diagnosis of ulcer is made, operation should be carried out as soon as the condition of the patient will permit it. There is often a period immediately after the passing of blood when operation may be done before a second and possibly fatal hemorrhage occurs. If this opportunity is lost, the author waits until after the shock of the first hemorrhage has abated, usually about thirty-six hours.

Post operative hematemesis is discussed with regard to operations on the abdominal organs in general and operations on the stomach. It may occur after operation for abdominal infection, particularly acute appendicitis and acute cholecystitis. When the bleeding following an operation on the stomach appears early, immediate operation is in-

dicated. No post-operative hemorrhage has occurred in any of the author's cases of gastrojejunostomy since he began to loosen the stomach clamp before putting in the anterior layer of sutures.

Late postoperative bleeding occurs from duodenal ulcer, and is rare. It takes place usually in cases in which there was bleeding before operation, and may be due to the original ulcer or to a fresh ulcer. Bleeding occurred after operation in five of the author's cases in which there was no preoperative hemorrhage. In all cases except one, it came on within eighteen months after the operation. In most cases the gastric acidity had not been greatly reduced by the operation.

In thirteen cases bleeding occurred both before and after operation. Such hemorrhages are usually due to small erosions caused by infection. In cases which do not show a sufficient postoperative reduction of acidity an exploration should be done for evidences of chronic trouble in other organs. No patient in whom the operation brought about a sufficient increase in gastric acidity has had any postoperative symptoms whatsoever.

LABORATORIES

HARVEY P. BARRET, M.D., *Editor*
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Laboratory Aids in The Diagnosis of Acute Poliomyelitis.

In view of the fact that a mild epidemic of acute poliomyelitis is in progress in upper South Carolina and parts of North Carolina it would seem timely to mention the part the laboratory may take in aiding in the early diagnosis of the disease. Examination of the blood is of little value with the exception that most authorities agree that there is a leucocytosis in all cases with an increase in the polymorphonuclears.

Examination of the spinal fluid is considered to be the most helpful means of aiding in an early diagnosis. All agree that in the majority of cases there is an increased cell count with a marked

predominance of lymphocytes. In three other diseases a similar picture is found in the spinal fluid. These conditions are: tuberculosis, syphilis and encephalitis. A differential clinical diagnosis can usually be made in these diseases. The Harvard Infantile Paralysis Commission made, in 1920, an exhaustive study of seventy-five cases. To quote from the report of this commission: "It (lumbar puncture) was usually not done if the child was paralyzed so that the diagnosis of poliomyelitis was clear, or if other physical signs indicated directly the nature of the disease. Under other circumstances lumbar puncture was advocated on the ground that it makes possible the early recognition of cases which may be capable of transmitting the disease, that it leads to their receiving better care from the onset, and that the diagnosis of an abortive case which never develops paralysis carries with it an assurance of immunity in the future. In the preparalytic stage the most helpful diagnostic method is lumbar puncture, for experience has shown that in a large proportion of cases there is an increase in the cells in the spinal fluid. Draper has demonstrated that in the earliest phase of the disease, in certain cases, the spinal fluid may be normal and the increase in spinal fluid cell count may only develop after several days; but, without the pleocytosis, it is difficult or impossible to make a definite diagnosis of acute poliomyelitis in the pre-paralytic stage. If the diagnosis is made on the clinical picture together with an increased cell-count in the spinal fluid, and if certain other conditions known to cause similar changes in the spinal fluid can be excluded, the probability of its being correct is great. When an epidemic of poliomyelitis is in progress the error of diagnosis based on the clinical picture and spinal fluid examination would undoubtedly be very small."

Eye, Ear, Nose and Throat

C. N. PEELER, M.D., *Editor*
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Some Practical Points in Mastoid Surgery.

Mastoid surgery has made great progress in the last 25 years. No longer is the operation so much dreaded by the patient and surgeon. The mortality rate has decreased greatly; serious complications and sequelae are rare; the convalescence is short; there is scarcely any deformity and the impairment of hearing is slight.

The diagnosis of simple mastoiditis is, as a rule, easily made. Only in the atypical cases do we need the help of x-ray and laboratory. The x-ray is useful in giving the anatomical relationships, the location and amount of pathology in the mastoid cells; the laboratory, the kind of infection and white cell count. Otalgia of dental origin can be differentiated by these aids.

The treatment of these cases is surgical, and demands the complete extirpation of all mastoid cells. When completed the cavity often presents an inverted cone resting upon a triangular base, the apex of the cone corresponding to the antrum. In every case the posterior wall of the external canal should be partially removed, almost as much as in the radical operation. All rough edges and overhanging outer table of the skull should be removed and curetted smoothly.

The cavity should be cleansed, also the middle ear cavity thoroughly cleansed by means of a Eustachian catheter placed in the aditus-ad-antrum and saline solution forced through the middle ear into external auditory canal.

In suturing the wound the periosteum should be brought together and the wound closed. A cigarette drain should be placed in the two extremities of the incision. The drains should be removed the day following the operation. By this method thorough drainage and washing can be accomplished and the cavity will become dry in from three to five days.

Dr. Howard Dutrow, in an excellent paper read before the American Academy of Ophthalmology and Oto-Laryngology in the Washington meeting October 17, 1923, gives the following conclusions:

1. The advancement in laboratory methods and the perfection of the stereoscope in the study of x-ray plates are of great service in the diagnosis of mastoiditis.

2. Location, shape and prompt closure of at least two-thirds of the incision gives the best cosmetic effect.

3. Preservation and replacement of the periosteum is necessary for bone regeneration.

4. Protection of epithelial membrane adjacent to and within the tympanum is necessary in epidermization.

5. Thoroughness in removing all pathology.

6. Bevelled bony cavity of great value in the permanent obliteration of the exenterated mastoid process without the introduction of a foreign substance.

7. Obliteration of the aditus and its permanent closure effected by the regeneration of bone and fibrous tissue thereby preventing secondary mastoid infections.

8. Explore the dura and lateral sinus at the time of operation if you have any reason to feel that they might be involved.

9. A close study of histories and subsequent observations strongly suggest that acute intra-cranial complications take place very often simultaneously with the middle ear involvement.

10. Chills, church steeple temperature chart and positive blood culture are strongly suggestive of sinus thrombosis.

11. Transfusion of whole blood to supplement patient's resistance will save many lives.

12. Early recognition of the degree of middle ear and mastoid involvement with rational surgical treatment will result in a low mortality rate and the preservation of hearing.

RADIOLOGY

JOHN D. MACRAE, M.D., *Editor*
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Reporting on the X-ray Study of Lungs.

There is great need for a standard method of reporting the results of x-ray lung examinations. No matter how definite the radiologist's conclusions may be they are useless to the clinician unless the examiner makes his report very clear.

The art of descriptive writing is difficult and only acquired by thoughtful study and practice. If the radiologist will confer with the clinician on all cases he will benefit in two ways. First by co-relating symptoms and signs of lung disease with x-ray evidences he gains knowledge of his cases and thereby makes his interpretations more valuable. Second, by discussing his reports with the clinician he learns where he is failing to make these reports clear and can thereby improve his methods of description.

After giving the matter much thought, reading reports from many different radiologists and asking the views of many clinicians who have been in the habit of referring cases for my examination, I have come to use the following system in studying and reporting:

It is pre-supposed that we have stereoscopic films of the chest made in accord with an approved technic.

1. Comment on the character of the films. Are they under-exposed or over-exposed and is the patient's chest centered on the film or displaced laterally? If the films are too dark the evidence of early parenchymal involvement may go unrecognized, etc.

2. Describe the bony framework of the chest. If symmetrical and deep or symmetrical and flat say so, or if rib spaces are narrowed on one side more than the other, or if there are abnormalities of any kind, such as extra or fused ribs or old fractures or resections, describe what you see.

3. Muscles form a very important part of a chest picture. Look for pecu-

larities of pectorals; the diaphragm on each side; the heart and aorta, and also under this head the mammary glands. Any of these structures will cast shadows which will prove confusing if not understood.

4. The trachea may be seen to its point of bifurcation. It is useful to know whether it is displaced laterally and where it bifurcates. Such knowledge helps in determining the character of pulmonary lesions, responsible for displacement. For instance a firmly contracted fibroid tuberculous lesion will draw the trachea toward the side in which it is located, or a large pleural effusion or pneumothorax may push all the mediastinal viscera to the opposite side.

5. Hilum shadows may be large, small or of average size. They may represent calcified or hypertrophied lymph nodes. What is seen in the hilum of a child will mean one thing and may indicate some different pathology in the adult.

6. Knowing that the trunk shadows which radiate from the hila are produced in each instance by a bronchus, two veins, an artery and lymphatics bound together by connective tissue, and that the lobes of the lungs are to be recognized by the distribution of these trunks to them. It is plain that there is no more important thing for description than the distribution of trunks and the changes which may be seen in them and in their terminal branches and in the lung fields.

By this method a brief and concise description of a normal chest would read as follows:*

1. The films are good.
2. Chest symmetrical.
3. Trachea mid line, bifurcates in front of fourth dorsal vertebra.
4. Heart of average size, shape and position. Right diaphragm smooth, its dome arches in front of the ninth intercostal space. The left is smooth and is slightly lower. All phrenic angles are clear.

*By normal I mean the chest of an average healthy adult.

5. The hilum shadows on each side are of average size and density and show small dense areas which represent calcified nodes.

6. The trunks in each lung are visible, not increased in length or density. Each lung is clear in its apex and periphery.

Conclusions: No disease recognized.

UROLOGY

A. J. CROWELL, M.D., *Editor*
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Conservation Dealing With Renal Lithiasis.

In the last issue of Southern Medicine and Surgery I gave a review of Dr. Chute's Presidential address before the Genito-urinary Surgeons' Association, in Washington, May the 3d and 4th, in which he strongly urged conservatism in kidney surgery. Dr. Gilbert J. Thomas, of Minneapolis, read at this same meeting a paper on "Bilateral Renal Lithiasis" in which he showed that between 12 and 15 per cent. of renal stones were bilateral in adults and in children about 6 per cent. were bilateral. This is about the same proportion of bilateral stone found by other surgeons and investigators; therefore, the warning given by Dr. Chute would seem very appropriate from the standpoint of conservation in renal surgery.

Dr. Thomas found in his study of this subject that 66 per cent. of bilateral stones were multiple and occurred in kidneys chronically infected. Statistics show that it occurs five times as often in the male as in the female and that the average age is forty-three.

We are of the opinion that nephrectomy is justifiable under no circumstances for renal lithiasis, either unilateral or bilateral, without kidney infection and greatly impaired function; since recurrence is so frequent.

About 66 per cent. of the patients have no symptoms referable to the kidney. It is generally conceded that about 30 per cent. have recurrence following operation. Those relieved following operation have single small

stones free in the renal pelvis or located at the uretero-pelvic junction when there is little or no infection in the kidneys.

I agree with Dr. Thomas in the belief that nephritic stone in children is more frequent than is generally thought and is often overlooked. The presence of pus in the urine of children accompanied with attacks of fever should be sufficient warning for a careful urological examination before a diagnosis of simple pyelitis is made. Roentgenograms in these cases should never be neglected.

We also agree with Dr. Thomas that in bilateral renal lithiasis, except where small single stones are present, surgery should not be resorted to.

His conclusions are in perfect accord with our views which are:

1. In infants and children six per cent. of renal stones are bilateral.

2. In adults twelve per cent. of renal stones are bilateral.

3. Bilateral renal stones are multiple in sixty-six per cent.

4. Large stones may be present in both kidney pelves without producing symptoms.

5. Renal stones which may be silent in one or both kidneys should be thought of in all infants or children who have pus in the urine.

6. A complete urologic study should be made of infants and children having pus in the urine. This must include a roentgenogram of the entire urinary tract.

7. Bilateral renal stones, when multiple or when large, are rarely surgical unless an emergency exist. Multiple recurrence is the rule.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
Charlotte

Congenital Dislocation of the Hip.

In the April issue of the *Journal of Bone and Joint Surgery* were two articles on congenital hip dislocation. One dealt with a survey of the experience of two workers with three hundred and

forty-nine cases, of all ages, and the other dealt with the surgical management of this lesion in young adults.

Since the spectacular invasion of this country some twenty years ago by Lorenz and the latter's activity in connection with the treatment of congenital hips there has been a gradual increase in interest by American workers in this pathological condition. Ridlon of Chicago sponsored, to some degree, the work of Lorenz at that time and has followed some of his cases since with criticism of the end results. However justifiable the criticism of Lorenz may have been following his earlier work, or however unfortunate his exploitation during a more recent visit it remains to be said in his favor that he stimulated American thought and action in connection with congenital hips more than any other man.

The first outstanding need regarding the congenital hip is its early recognition. The worst thing on the worker's statistics is his attempting to manage late cases. There are few cases recognized before the walking age though it is quite possible. The mother usually notices a disproportion about the hips or an early limp. As doctors we should suspect a possible congenital hip when such a report is made on a child. A clinical examination will lead to a diagnosis; an x-ray is positive. On one occasion it was remarked to a leading Philadelphia surgeon that we did not have many congenital hips in the South. His answer was that we had them but failed to recognize them. There may have been some truth in both statements.

In the series of 379 cases of Gillette and Chatterton 44 per cent of the cases were not presented until four years of age. Almost one-third of the cases were either past the operable stage or in the "doubtfully successful" operative stage. By operation is meant reduction by manipulation, closed method or open method.

There were certain general observations made in the series referred to:

80 per cent were female. Where one hip was dislocated the left was most often out, though both were out in the largest number. Operative difficulty increased and prognosis was poorer after six years of age. The most popular complaint was a painless limp or waddle, late walking and shortening. The shortening was from one-half to one and one-half inches, anything over one and one-half inches greatly increases difficulty of reduction and decreases favorable prognosis. Family history and birth history of little importance. Three cases were complicated by paralysis after treatment though all cleared up. Eight cases had some limitation of motion. Sixty had no operations.

Allison reports the operating procedure for reduction of rather late cases. It calls for quite a hospital stay, traction on the leg, one open operation to free restraining structure about the hip, more traction and then a final open operation for reduction. While the conception of the thing and its performance is commendable, some observers feel that it is too much surgery for the expectation. From a practical standpoint the whole matter of congenital hips resolves itself into a campaign of finding them early, by two years of age, if possible, certainly before four.

In the past there have been certain methods of reduction put forward to meet this condition and these methods have been given names after certain surgeons. Gill very well says: "We should employ the means of reduction that we are individually familiar with because there are a number of good ways of reducing the hip and various surgeons obtain good results by their own methods in a certain percentage of cases, varying from fifty to sixty or seventy per cent. In this percentage of cases we all get a good result from our own method of reduction, with which

we are familiar and with our methods of after treatment.

I doubt whether it is wise to lay too much stress upon the method which is employed in these cases or to recommend any complicated procedure for after-care, because I think that our good results are not so much dependent upon the method of reduction or the form of after-care as they are upon the anatomic structure of the hip joint with which we are confronted in these cases. If we confine ourselves entirely to bloodless methods of treating congenital dislocation of the hip we are all confronted with a certain percentage of cases of failure no matter what method of after-treatment is employed. These are the cases in which the anatomic structure of the dislocated hip departs so far from the normal that either the hip cannot be reduced or it will not stay reduced over a period of years, no matter what method of bloodless treatment is employed.

I have never yet opened a hip joint in either old or young in which there has not been apparent to me some insuperable obstacle to closed reduction. Therefore, if we are unable to secure reduction or to maintain it in the younger cases, even as young as two or three years of age, we should not hesitate to do an open operation. In regard to the time at which bloodless reduction should be attempted, I most heartily disagree with those who advise that we wait until the child begins to walk before reduction is attempted. The earlier the head of the femur is placed in the socket, the earlier its normal function begins and the earlier the natural development of the structures of hip go hand in hand with function. If the hip remains for several years out of the socket, we cannot expect either natural development or natural architecture of the parts involved.

PEDIATRICS

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Brooklyn, N. Y. and Black Mountain, N. C.

An Experiment in Post-Graduate Pediatric Education.

Two branches of medicine have rightly been called the specialities of the general practitioner. They are of course obstetrics and pediatrics,—for of no other branches of medicine could this conceivably be said. Just whose duty it is to improve the general practitioner in these branches is something of a moot point. In New York State, the Department of Health has stepped into the breach, with funds made available through the Shepherd-Towner appropriation. In other parts of the country undergraduate medical schools have widened their curricula to include the needs of the profession. In some places the privately owned and operated post-graduate medical school has done yeoman service. In Brooklyn, medical school and county medical society have joined forces. In North Carolina, years ago, the State University, the State Board of Health, and the State Medical Society united in a plan which has been both admired and copied elsewhere.

It has been the very pleasant function of the editor of this department of Southern Medicine and Surgery, to report once a year upon the progress of an experiment in pediatric postgraduate education for the general practitioner, undertaken some years ago at the instance of the pediatricians of this section of the country, for the joint benefit of the Southern baby and of the Southern doctor. How well it has succeeded in fulfilling its purpose may fairly be inferred from the growth that has already taken place. Three students in 1921, its premier season—forty-five in 1924, representing ten of the Southern States. Its faculty and staff of lecturers represent nearly as many states, and about the same number of medical schools,—professors of pediatrics and of allied branches of medicine from practically all the schools in the eastern section of the South being among those

lecturers and clinical teachers that the student may hear, meet, and quiz, in the course of his two weeks' stay in the Land of the Sky. The Surgeon General of the U. S. Public Health Service has been sufficiently interested from the start to have one of his officers in attendance throughout the sessions. The various civic and social child welfare agencies are helping to put before the doctors who attend some of the opportunities for service that are available today to the man who treats children. The fact that all these leaders in Southern pediatrics serve at their own charges, and absolutely without compensation, shows the earnestness with which the members of this fraternity are supporting this pioneer effort at pediatric education for the general practitioner. Details as to what is offered, what it costs, and when, where, and how it is to be obtained, are set forth in the advertising pages of this number of Southern Medicine and Surgery. Suffice it to say here, that the Southern Pediatric Seminar, holding its fifth session at Saluda, North Carolina, from August 3 to 15 inclusive, is looking forward to the biggest year in its history. The great drawback in previous years has been the difficulty of accommodating lecturers and students, and their families, in a resort community already packed to capacity. This year, in order to remedy this condition at least in part, a hotel has been made available and equipped for the exclusive use of the matriculants and their families, no one else being accepted during the weeks of the Seminar sessions. The fact that this hotel has been added to those already available, makes it possible thus to expand the guest capacity of the community to a point where there need be no fear of crowding or inconvenience. The clinical material in past years has been so rich that the clinicians have never been able to show nearly all that was of interest. While the effort has always been to stress the common-place and the ordinary, rather than to feature the bizarre and the freak, still there has been sufficient even of the latter to con-

vert the doubters that pediatric education here need not be didactic only, provided teachers were willing to study and use teaching material. It has been generally held, on the part of faculty and students alike, that the greater benefit of clinical over strictly didactic teaching fully justified the greater effort demanded in putting on the former; and in this particular the Seminar has stood very high.

One proviso has been insted upon, in judging of the acceptability of teachers and their offerings. It has been insisted that there should be no "medical papers," as this term is ordinarily construed. Anything given to the men must be from the experience of the teacher himself, and vouched for as having been of service to him. This acid test of acceptable postgraduate teaching,—its practicalness,—has never been lost sight of. As a result, there has been a freshness and a spontaneity about

the work that is not always present in the cut-and-dried programs sometimes offered to graduate matriculants. Men who never expect to become pediatricians go away from the Seminar feeling better qualified to treat their little patients in general practice than they were when they came. While men who find their vague desires to specialize in this fascinating branch of medicine crystallize during their intimate association with the leaders of pediatrics throughout the South, have many times found the opening here for taking the step that has been in their thoughts for years, but has never before quite found a chance to express itself in action. No man can take the two weeks' course without being a better physician,—which is after all as high praise as any institution of higher learning can hope to merit.

The Children's Clinic, Black Mountain, N. C.

REVIEW OF RECENT BOOKS

TEXTBOOK OF DIFFERENTIAL DIAGNOSIS OF INTERNAL MEDICINE, By M. Matthes, M.D., Professor of Medicine and Director of the Medical Clinic, University of Königsberg; Authorized Translation of the Fourth German Edition with Extensive Additions, by I. W. Hild, M.D., and M. H. Goss, M.D., New York City, N. Y.; with 176 Illustrations, some in colors. Philadelphia, P. Blakiston's Son & Co., 1012 Walnut Street.

According to the translators, this book is used by most medical schools in Germany and recommended by teachers who are authors of text-books on the subject.

The author proceeds in an unusual way in not discussing well defined diseases, "but only the symptoms or symptom-complexes . . . which may be open to different interpretations." He introduces the physician to the patient just as the two come together in actual practice. He warns against being influenced by general impressions. Illustrative cases are cited and the advice given to consider the commonest possibility "and deviate from it only for definite reasons." In other words diagnosis by intuition or by expecting to find a mare's nest is discouraged!

The great value of the ordinary and differential leucocyte count in shedding light on

febrile conditions is pointed out. Lumbar puncture should be restricted to such cases where there is reason to suspect disease of the central nervous system. It should be remembered that the objective findings in central croupous pneumonia are not characteristic.

A few pages describe the changes in the clinical picture of typhoid brought about by inoculation against the disease which has not proven wholly successful. Warning is given against carelessly diagnosing as influenza any febrile disturbance, not obviously due to some other cause, occurring during the progress of an epidemic of influenza. It is suggested that it would be wise to classify certain fevers of unascertained etiology "cryptogenetic fever" because we would thus declare our ignorance and stimulate further study.

German insurance companies send all cases suspected of tuberculosis to a hospital for observation. Attention is paid to the personal history and exact temperature records as influenced by exercise. Inspection is important for eliciting an early restriction of mobility on affected side.

"The Differential Diagnosis of the Meningeal Symptom-Complex" makes a valuable chapter; also that of "The Peritonitic Symptom-Complex." Careful study of these chap-

ters will well repay any doctor in the avoidance of dangerous and humiliating errors.

Three forms of lung tuberculous are thus differentiated: (1) The acute and subacute exudative, caseous and bronchopneumonic form; (2) the slowly progressive proliferative form; (3) the cirrhotic form. This is an excellent classification giving information as to probable outcome with the rationale.

Simple tests for ascertaining the competency of the circulatory function are given as of much importance. Observing the effects on the second aortic and pulmonic sounds produced by exercise has proven useful to the author.

Variations in size of the heart within wide limits are entirely compatible with perfect efficiency and "the diagnostic value of cardiac murmurs must be judged with the same reserve as the size of the heart."

The differential diagnoses of gall-bladder disease, pancreatitis, constipation and appendicitis are discussed at length. "Until ten or fifteen years ago surgeons and even internists were ready to yield to the temptation, if the patient complained of pain in the ileo-cecal region, and had gastric symptoms, to consider it chronic appendicitis and advise operation. The numerous disappointments, however, that the removal of the appendix, even if the pathologist pronounced it diseased, brought no permanent relief, has rightly taught us to be more careful before we attribute symptoms to chronic appendicitis."

Under tests of kidney function those tests are described in the main, which may be used by the average doctor, and the facts that they are of great importance and give much valuable information are pointed out.

A consideration of some of the diseases of metabolism and the endocrine glands takes up less space than would have been anticipated. The anemias come in for careful dealing.

The final chapter concerns itself with the commonest of human ailments,—headache.

This work, while full and exhaustive, always keeps the needs and equipment of the general practitioner in mind, and while giving proper value to complicated methods, insists always on the much more important things to be learned by an intelligent, earnest application of the means of diagnosis which are at the command of every man of medicine.

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION. Edited by Mrs. M. H. Mellish: Volume XVI, 1924. Published May, 1925. Philadelphia and London, W. B. Saunders Co., 1925.

This volume containing all the papers for 1924 from the Mayo Clinic and the Mayo Foundation complete, abridged, abstracted or by title, will attract the immediate attention of all students of medicine.

Diseases of the different parts and systems of the body are discussed in such numbers as to make it a well balanced collection.

Among the titles of unusual interest to the surgeon are "Chronic Peptic Ulcer in Children," "The Case Against Gastro-Enterostomy," "The Surgical Treatment of Hepatic cirrhoses" and "The Use of Full Thickness Skin Grafts"; to the internist "Psychic Manifestations in Brain Tumors," "Studies in the Metabolism of Fat," "Tuberculosis and Its Transmission" and "Myocardial Infraction." There are many others of the greatest interest to pathologist and bacteriologist.

PHYSICAL DIAGNOSIS OF DISEASES OF THE CHEST. By Joseph H. Pratt, A.M., M.D., and George E. Bushnell, Ph.D., M.D. Octavo of 522 pages with 166 illustrations. Philadelphia and London: W. B. Saunders Company, 1925.

This book is just what its title says it is. It emphasizes the fact throughout, that "the seeing eye, the trained finger and the educated ear are still worth more to the examiner than all the instrumental means of diagnosis." It is advised that we seek to learn not only an explanation of the symptoms which bring the patient to the doctor, but all the diseases with which he is afflicted. Routine methods of examination, including the use of forms, are discouraged. "In judging of the health and stamina of an individual, too much importance should not be given to the shape of the thorax an abnormally long and narrow chest may have so abnormal a length that the cubic contents equal those of a more athletic chest." "It has recently been noted in life insurance circles that persons below the average weight of their height class have a better expectation of life than those at or above the average weight." These sentences are quoted to illustrate the thoughtfulness and robust common sense shown from cover to cover.

Methods are not described merely because some one has used them; only those found useful in the hands of the authors are given place.

ABT'S PEDIATRICS. By 150 specialists Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totaling 8000 pages with 1500 illustrations, and separate index volume free. Now ready—Volume VII containing 879 pages with 70 illustrations. Philadelphia and London: W. B. Saunders Company.

This volume arrived just when several cases of polio-myelitis were being reported in this section. This Journal quoted fully the directions given in this work for control of the disease.

An excellent chapter is that on "The Physiology of the Nervous System in Early Life." No attempt is made to state the precise nature of the relationship between chorea and rheumatism. Greatly varying statistics are quoted on the association of chorea and tonsillitis. Under treatment of this condition it

is stated that drugs are of secondary importance.

Many tables are used to supplement the text of "Convulsions in the Newborn." Epilepsy is still called a symptom-complex, and bromides retain first place among remedial agents. Poliomyelitis is dealt with exhaustively and instructively. "The Psychopathology of Childhood" receives much attention, and the early correction of tendencies toward the pathologic is stressed.

MODERN SURGERY, General and Operative, by J. Chalmers Da Costa, M.D., LL.D., F.A.C.S. Samuel D. Gross, Professor of Surgery, Jefferson Medical College, Philadelphia, Ninth Edition, Revised and Reset. Octavo of 1527 pages with 1200 illustrations, some in colors. Philadelphia and London; W. B. Saunders Company.

An attempt is made to answer the question (from a surgical viewpoint) "What is Truth?" This augurs well for what is to follow. Though not possessed of unbounded enthusiasm, the author wants it known that he is not one with Sir Peter Teazle in the opinion that "we live in a damned wicked world and the fewer we praise the better."

The first part of the book discusses the Principles of Surgery in a very instructive way. Wounds in war are given brief consideration. The history of Transfusion is of great interest. In 1666 Dr. Croone is said to have told Pepys about the blood of a little dog having been let out into the body of another. Pepys remarks: "This did give occasion to many pretty wishes, as of the blood of a Quaker to be let into an Archbishop and such like." At the present time transfusion is said to be "incomparably, the best form of treatment for acute hemorrhage," and the Unger method is given preference.

Eclecticism is advocated in deciding on the manner of treatment of fractures.

Cholecystectomy is given preference usually over cholecystotomy. Operations on the abdo-

men are described in detail.

A well-constructed index concludes this excellent work.

INTERNATIONAL CLINICS: A Quarterly, By Leading Members of the Medical Profession Throughout the World, edited by Henry W. Cattell, A.M., M.D., Philadelphia, U. S. A. Volume II, Thirty-Fifth Series, 1925. Philadelphia and London, J. B. Lippincott Co., 1925.

"Prof. Tait McKenzie's Medical Portraits" is given first place. Among the subjects are Drs. William Henry Drummond, Dudley A. Sargent, Francis K. Huger, S. Weir Mitchell, W. W. Keen, Crawford W. Long, Robert Jones, Wilfred Grenfell and Wm. Osler.

There are monographs on "The Present Status of Affections of the Kidney," "On the Systemic or Cardiovascular Effects of Arteriovenous Fistulae" and "Dysentery: Its Diagnosis and Management Through the Microscope."

Among the articles of especial interest are "Personal Experience Fundamental for Prognosis in Medical Practice," by Christian G. H. Baumler, M.D., of Freiburg, Germany. "The Patient or His Diseases?" by James J. Walsh, M.D., New York City; "Reconstruction Surgery," by Fred H. Albee, M.D., New York City; and a "Special Article," by Major General Merritte W. Ireland, M.D., of Washington.

SIMPLIFIED NURSING, by Florence Dakin, R.N., Inspector of Schools of Nursing, State of New Jersey: Illustrated. Philadelphia, London, Montreal. J. B. Lippincott Co.

The rudiments of nursing are presented in a condensed form such as to please those of us who are decidedly of the opinion that much more time than is necessary is required to be spent in training before a nurse is graduated. While intended largely for home nurses it may well be considered as an ample textbook for nurses in training in our hospitals.

NEWS ITEMS

Dr. Stewart Roberts Guest of County Medical Society.

On the evening of June 16, the regular meeting of the Mecklenburg County Medical Society was held at the Charlotts Country Club. Dr. Stewart Roberts, Professor of Clinical Medicine in Emory University, the guest and speaker of the evening, discussed "The Size of the Heart and Its Relation to Disease."

At District Meeting Doctor MacNider is Honored.

Chapel Hill, June 26.—The University of North Carolina was host yesterday to more than 100 physicians from the counties of Alamance, Caswell, Durham, Orange, Franklin, Granville, Person, Vance, Wake and Warren, here for the annual meeting of the Sixth Councilor District Medical Society. The doctors held a good session in the medical

building in the morning and then adjourned to the Country Club for an old-fashioned barbecue dinner prepared under the direction of Business Manager Charlie Woollen. The guests numbered more than 200.

There was no love feast for anybody put down on the program, but that honor fell to Dr. W. deB. MacNider, president of the State Medical Society, when Dr. Eric A. Abernethy, presiding over the meeting, announced that it was Dr. MacNider's 44th birthday. Dr. Abernethy presented Dr. Foy Roberson, of Durham, and the latter presented to Dr. MacNider in behalf of the Orange County Medical Society a handsomely bound volume containing birthday greetings from 60 eminent medical men throughout the country.

Speaking for the medical profession, Dr. Abernethy expressed "affectionate regard for a man who, shunning the limelight, has buried himself in a small village to give the world work of inestimable value."

"We all love him and are proud of him," declared Dr. Roberson, and then the whole crowd chimed in on praises of the University physician. These were touching tributes and Dr. MacNider's eyes were moist when he arose to acknowledge them.

The meeting opened with invocation by Rev. Walter Patton, pastor of the Methodist church. The delegates were welcomed to the University by Dr. James F. Royster, dean of the College of Liberal Arts, acting for President Chase, who was not in town. Dr. Royster declared that the best type of students were entering medicine.

The response was by Dr. Thurman D. Kitchin, dean of the Wake Forest School of Medicine, who paid tribute to Dr. Manning and Dr. MacNider, "my teachers of 20 years ago." Dean Kitchin discussed the origin and development of scientific societies, showing how they have been an important step in the advancement of knowledge. They arose in Italy in the sixteenth century and shortly afterward came to be numerous

in spite of the fact the Pope dissolved the first of them. "Even now, after four centuries of civilization, there are those who view with alarm scientific discussions."

Delivering the annual address of the president, Dr. Abernethy, serving for the second time in the last five years, told of the medical care given the University student body by three agencies, the gymnasium, the department of sanitation and the infirmary.

There were a number of papers dealing with various phases of medicine. Dr. N. D. Bitting, of Durham, discussed "Some Phases of Acute Surgical Abdomen." Discussing "The Action of Nitrites and Veratrum in Hypertension Cases," Dr. MacNider said that veratrum was a safe drug and not dangerous as some physicians believed. His paper was based on laboratory experiments.

Dr. O. E. Finch, of Raleigh, spoke on "The Diagnosis of Active Incipient Pulmonary Tuberculosis." Dr. Beverly R. Tucker, Richmond, Va., an invited guest, discussed "Encephalitis."

Dr. I. H. Manning, dean of the University Medical School, read a paper on "Vitamines," and then invited the members to examine the library and other parts of the medical building. He told the physicians that he had visions of a four-year medical school here in the near future.

Dr. Charles R. Bugg, child specialist, of Raleigh, discussing the treatment of diarrheal diseases, stressed the use of sour milk, lactic acid milk or lemon juice added to sweet milk for diarrheal diseases in children.

Interesting discussions followed each paper, different doctors giving the benefit of their experience.

Dr. V. M. Hicks, of Raleigh, giving the Councillor's report, stated that every county, except Person, has some form of organization among its medical men. He suggested a semi-annual meeting in place of the annual one. This was put in the form of a motion and carried.

New officers were elected as follows:

Dr. J. R. Parker, of Burlington, president; Dr. Thurman D. Kitchin, of Wake Forest, vice-president Dr. D. W. Fassett was reelected secretary-treasurer. The officers are to decide the time and place for the next meeting.

Among the physicians present were: Drs. R. B. Lawson, E. A. Abernethy, William deB. MacNider, I. H. Manning, D. A. MacPherson, C. S. Mangum, B. B. Lloyd, all of Chapel Hill; O. E. Finch, A. C. Campbell, C. R. Bugg, W. B. Dewar, Paul N. Neal, C. O. Abernathy, J. W. McGee, V. M. Hicks, Hugh A. Thompson, H. G. Turner and H. A. Royster, of Raleigh; R. E. Nichols, W. M. Coppridge, George H. Ross, N. D. Bitting, W. P. Hardee, W. B. McCutcheon, F. C. Smith, William M. Watkins, George T. Waktins, jr., C. W. Holloway, B. W. Brooks, T. C. Kerris, H. M. Grinkley, Foy Roberson and George L. Carington, all of Durham; S. A. Malloy, of Yanceyville; H. M. Vann and T. D. Kitchin, of Wake Forest; R. F. Warren, of Prospect Hill; J. P. Hunter, James M. Templeton, of Cary; B. R. Tucker, of Richmond; H. H. Johnson, S. P. Burt, Hubert Perry, all of Louisburg; F. R. Harris, of Henderson; H. M. Montgomery, C. A. Anderson, P. C. Brettelle, C. M. Walters, J. A. Pickett, C. W. McPherson, all of Burlington; W. B. Chapin, of Pittsboro; Joseph Thompson and G. T. Sikes, of Creedmoor; R. G. McPherson, of Saxapahaw; John H. Merritt, of Woodsdale; C. A. Woodard, of Wilson; J. G. Murphy, of Wilmington; L. A. Crowell, of Lincolnton; James M. Parrott, of Kinston; J. M. Thompson and T. D. Tyson, of Mebane; Charles F. Cheek, of Fuquay Springs.—News and Observer.

World Conference on Narcotic Education.

RESOLVED: That a World Conference on NARCOTIC EDUCATION shall be held in the City of Philadelphia about the third week in June, 1926.

RESOLVED: That the League of Nations be requested to call a conference of the Opium Committee, the Mixed

Sub-Committee of the Health Committee, and the Advisory Committee on the Traffic in Opium, and such other organizations as our PRESIDENT shall deem proper, to meet at the same time and place with educational agenda only.

RESOLVED: That the PRESIDENT of the United States be requested to invite the Governments of the World to join with our Government in participation.

RESOLVED: That Congress be requested to make an appropriation for a fitting participation of the Government of the United States.

RESOLVED: That the PRESS, the PULPIT, the MOTION PICTURES, the RADIO, EDUCATIONAL OFFICIALS, federal, state, local, CIVIL, RELIGIOUS, EDUCATIONAL, PATRIOTIC and other constructive ORGANIZATIONS and INSTITUTIONS be requested to cooperate.

BE IT FURTHER RESOLVED: That the PRESIDENT of the INTERNATIONAL NARCOTIC EDUCATION ASSOCIATION, with the advice and consent of the Executive Committee, is hereby authorized to appoint committees and take other steps deemed necessary or advisable to carry out the provisions of this Resolution.

—Adopted by Board of Directors of the International Narcotic Education Association, Los Angeles, May, 1925.

The Educational Significance of the Medical Center.*

(From the Columbia Alumni News)
Nicholas Murray Butler, President
Columbia University

Tonight we proclaim and celebrate the fulfillment of an old, old dream, and we record the accomplishment of a prophecy made long before any one within the sound of my voice was born. It is almost exactly one hundred and fifty-six years since the first professor of the

*Address delivered at the mass meeting held in Carnegie Hall, Thursday, April 30, opening the public campaign to complete the fund of ten million dollars of which eight million has been raised, for building the first unit of the Columbia-Presbyterian Medical Center.

practice of medicine in New York, holding that chair in old King's College, in speaking to what was perhaps the first class of medical students ever graduated in America, made a speech which would have been appropriate to this platform.

Dr. Samuel Bard said as long ago as that the very things which we, in somewhat different words, are saying to you and to this community tonight.

My friends, we are building a new part of the City of New York and of America. We are doing far more than creating a great center of medicine for the study of disease, for the prosecution of research, for the care of the sick and the suffering, stupendous, far-reaching, and many-sided as those services are. We are building a monument to American purpose and American idealism, more lasting than either marble or bronze.

New York is a young city. We have yet to celebrate the three hundredth anniversary of its settlement. London and Paris and Rome and Athens must look upon us as a very new comer. As we reflect upon their history and their accomplishment, we catch sight of the lesson they have for us, of the inspiration they offer, of the example that they set. No man not addicted to the Encyclopedia remembers how great was the population of Athens or Rome. No man, unless abnormally curious, could tell us of their commerce, their wealth or those who grew fat upon the industry of that time. But every schoolboy knows the names of those who said great things, who wrote great things, who did great things, who built great things, and who made Athens and Rome names that stir the heart of every human being of intelligence that lives in this world. The great modern capitals have their story to tell, and we, in our three hundred years, have made a beginning. We have laid the foundations, we have produced a long series of men of achievement, eminent achievement and accomplishment in public life and in the professions, we have laid the foundation and have conducted over considerable periods of

time, laid the foundation of noble institutions, to give expression and voice to the highest inspirations and feelings of our people, but we have still a long way to go.

New York, sitting at the gateway of a continent, bearing the burdens of a great people, having contacts more numerous, more many-sided than any other community in the modern world, New York, too, will depend for its fame, depend for its satisfaction, depend for its enduring reputation, upon the institutions that it builds, to give voice and expression to its faith, to its high purpose, to its zeal for truth, to its capacity to serve both God and Man.

We are doing for medicine, for surgery, for the public health, everything that science and art and generous endeavor can make possible, but do not forget we are doing still more—we are giving voice to the best there is in the life and the hope of New York. Our great cathedrals and churches of various religious faiths, our universities zealous in pursuit of knowledge and in transmitting it, our great museums with their collections of art and science and animal life, our noble collections placed at public use by private hands, our schools, our works of art, our parks, our modern architecture, unique and striking—all these are part of our real contributions. They will remain, Mr. Chairman, when the statistics of our trade and commerce have been forgotten. And this great enterprise, unique of its kind because the opportunity is unique, unique of its kind because the cooperation and the support given it are unique, unique of its kind because its scope is unique—this will take its place with the greatest achievements of modern New York and will remain through the ages, one of New York's surest titles to fame as the center and home of intelligence, cultivation, scientific knowledge and zeal for the public service.

It was Cicero who said so long ago that man comes nearer the Divine when he brings back health to the suffering than at any other time or in any other way. Health, the public health, individu-

al health and satisfaction, are the cornerstones of a successful and a fortunate civilization. Without these, everything is imperfect or impossible. With them, everything is possible.

It is amazing what medicine has accomplished in human history, with all the imperfect instruments and the limited knowledge with which it had to deal. Way back in Mesopotamia and in Egypt are to be found today records and bits of ruined instruments that show that the mind of man was even then on the right track in trying to heal and to cure his fellows. But modern scientific medicine is so new that it is startling. The great science of pathology is younger than many of us, and the first pathological laboratory in the City of New York is easily within my own none-too-long memory. Chemistry, physics, modern physiology, those analyses that reveal to us the structure and function of every organ and every part, which give us knowledge to take the place of what once was guesswork or intuition—all this is the new fabric, the new foundation, being widened and deepened and extended day by day, that he who masters it may march more steadily, more quickly, more surely, to the relief and care of his stricken fellows.

And then there is the human aspect of medicine, never to be forgotten. No scientific formula will ever make a great physician. The great physician is a compound, a subtle compound of knowledge and temperament, of head and of heart, or zeal for research and of those subtle intuitions that lead him to understand the feelings, the temperament and the shortcomings of men. The great healer is the great personality armed with scientific knowledge, broadened and deepened by experience, enriched by contact with every sort of unfortunate accident and disease.

Mr. Chairman, we must not forget another important aspect of this great undertaking. It must include for its completion and perfection the most ample and the most modern provision for the training of those who nurse.

The physicians can do so much, but

only so much. The nurse, alert, well trained, experienced, is his Chief of Staff, and can do many things in that campaign against disease and suffering which the commanding officer himself cannot undertake; and as we lay more and more stress upon preventive medicine, the importance of the nurse, of the breadth of training, of the sort of training, the scope of training, will immensely increase, for in civilized communities we propose to protect the population from those diseases against which protection is possible, by knowledge, by care, and by right living.

Do you remember that clever remark of Robert Ingersoll, when he was asked, after one of his anti-theological lectures, what he would have done differently had he been permitted to create the universe? Ingersoll replied, "One thing I can think of at once: I should have made health contagious; not disease."

One object of this great undertaking is to make health contagious, to make it contagious on the basis of knowledge, on the basis of experience, on the basis of right and sane and satisfactory living. In what better business can a great university be engaged than to offer the fullest and most generous and most ample cooperation to a great hospital and series of hospitals, in order to carry to completion a monument so noble, so striking, and so unique as this? Generous hands have been stretched out to help; princely benefactions have been made that this project might be made secure. It rests with New York—the New York of today, the New York of tomorrow, to put this great undertaking where it belongs on a plane of established success that will make it a center of admiration for the whole world and a source of satisfaction and comfort to every one who in his own person or in that of some one whom he loves and trusts, is stricken by one of those enemies of the human race that we call disease.

The New President of the Medical College of Virginia.

At a meeting of the Board of Visitors of the Medical College of Virginia held in March, Dr. W. T. Sanger, Secretary of the Virginia State Board of Education, was elected president of the college succeeding Dr. Stuart McGuire.

Dr. McGuire has for several years been anxious to be relieved of his duties as president, and has advocated that the institution secure a full-time president.

Dr. Sanger is 39 years of age. He was born at Bridgewater in Rockingham County, Virginia.

He received his B. A. degree from Bridgewater College in 1909. In 1910 he took his M. A. degree at Indiana University.

For some time he taught in elementary and high schools, studying at Columbia University in the summer. He then taught psychology education and philosophy at Bridgewater College and was fellow in psychology at Clark University. In 1915 Clark University conferred on him the degree of doctor of philosophy.

Dr. Sanger came to Richmond in 1921 as the first full-time secretary of the State Teachers' Association and editor of the Virginia Journal of Education. In September, 1922, he became secretary of the State Board of Education.

"It will be my plan when coming to the college first to make an intensive study of the entire situation and then build up within the college and among its alumni and friends real teamwork in behalf of such a ten-year program of development for the college and service by the college as may be agreed upon. In this connection, it will be fundamental to present an appropriate and continuous interpretation of the work and needs of the college, not only to its friends, but to the entire citizenship of the State, and in some degree to the rest of the nation. The success of the ten-year program will also be contingent upon the development of educational contacts throughout the country,

not only in the specialized fields covered by the college curricula, but also in every field of education; the success of any professional college is dependent ultimately upon elementary and high school education as well as upon collegiate studies.

"The mounting cost of education compels every institution, even the richest, to seek further funds to meet the new obligations of this century. The Medical College of Virginia cannot be regarded as an exception; financial support, generously provided, must be secured as speedily as possible. This will involve a large co-operative effort on the part of the alumni and of the friends who have a just pride in the enviable record which the college has already made and who have a fine confidence in its future.

"Having been trained in the laboratory, naturally I believe in research. Now the college has already made its contribution both through its own staff and through its alumni, but it is to be hoped that funds can be provided to further sustain the types of research which a college like ours must undertake even to the point of sacrifice.

"It is my growing conviction that it is the function of a college to more carefully select its entering students, and when once admitted it is the obligation of the college to study its students as well as to teach them. Personnel work in higher education designed to guarantee the largest possible return in its product is now in its early beginnings; its good results must be capitalized for our college and its technique must be further developed to serve specific local needs.

"Finally, it seems to me that any new contribution which the college through its several schools and hospitals can make to the welfare of the State should receive very careful investigation to the end that this contribution may be effectively and promptly made.

"For these and other objectives set for the Medical College of Virginia, I bespeak the assistance of the entire body of alumni."—Skull and Crossbones,

A Prize For Research in Surgery.

This prize was established in February, 1925, by Dr. J. Shelton Horsley of Richmond, Virginia, a distinguished alumnus, as a memorial to his father, Mr. John Horsley of Nelson County, Virginia.

The prize consists of two years' interest on \$10,000 in 5 per cent. bonds and will therefore be presumptively \$1,000. It is to be awarded every two years by a committee of the Medical Faculty of the University of Virginia for a thesis upon some subject in general surgery. The term "general surgery" is used in a broad way and includes the specialties commonly associated with general surgery such as orthopedic surgery, urology and gynecology but not the specialties of the surgery of the eye, ear, nose and throat which have developed along lines which differentiate them markedly from general surgery.

The object of the prize is to stimulate an interest in the scientific aspects of surgery. In the past there has been some tendency to glorify the mechanical technic of surgery, and perhaps some neglect of its underlying scientific features. The donor wishes particularly to stimulate an interest in the underlying biologic principles with the hope that surgeons may not become mere operators but be imbued with a scientific spirit which will contribute to the advancement of surgical knowledge.

With this in view the essay should be on a surgical problem, the solution of which depends solely or in large part upon research work, (preferably original research) in some branch of pathology, bacteriology, physiology, biochemistry or embryology.

All graduates of the Medical Department of the University of Virginia of not more than fifteen years standing are eligible for this prize and are invited to submit theses. In the discretion of the committee the prize may be awarded for work done by a medical graduate of the University of Virginia in collaboration with a non-alumnus

of this institution but in such a case the award will be given to the Virginia graduate alone.

The prize is to be awarded bi-ennially at the final exercises of the University of Virginia by a committee consisting of the Dean of the Medical School of the University of Virginia, the professor of surgery, the professor of pathology, the professor of physiology, the professor of biochemistry and the professor of histology and embryology. The decision will be made by a majority vote. In no instance shall a thesis be awarded a prize unless it contains work that is deemed worthy. If no essay is considered worthy the prize shall not be awarded and the accumulated interest will be added to the principal. After two years theses will again be examined for an award but it is not at present intended that the prize shall exceed one thousand dollars.

The theses must be submitted to the committee in typewritten form and work that has not been previously published will be preferred. If the work has been previously published it must be presented in a new form. The committee will make suitable arrangements for the publication of the theses.

All theses entered in this competition must be in the hands of the committee on February 1st, of the year in which the prize is to be awarded. They should be addressed to the Dean of the Medical School of the University of Virginia.

The prize is to be awarded for the first time in June, 1927, therefore the theses should be presented not later than February 1st, of that year.

The President-Elect

The election of Dr. Wendell Christopher Phillips of New York to the presidency of the American Medical Association is a recognition of many years of service to organized medicine and of seven years of exceptional service as a trustee. During his trusteeship, Dr. Phillips was for part of the time chairman of the board, and for several years a member of the Executive Committee.

In addition to attending the regular sessions of the board, he journeyed from New York to Chicago each month, giving several days of his time to the business of the Association. He was also a member of the House of Delegates of the Association for six years, 1912, 1917. Dr. Phillips was born in Hammond, N. Y., June 9, 1859. He is the son of Samuel and Mary (Merrill) Phillips, was educated at Potsdam (N. Y.) Normal School, 1876-1879, and received his degree in medicine from the University Medical College of New York University in 1882. He devoted himself promptly to diseases of the ear, nose and throat, becoming consulting aural surgeon to the New York Postgraduate and Flushing hospitals, and aural surgeon to the Manhattan Eye and Ear Hospital. Dr. Phillips is a member of the American and of the New York otolaryngological societies, and was president of the American Laryngological, Rhinological and Otolological Society in 1907. He is also a member of the New York Academy of Medicine, and was president of the Medical Society of the State of New York in 1912. He has contributed widely to the subject of otology in medical literature, including a book, "Diseases of the Ear, Nose and Throat, Medical and Surgical," which is used as a text-book in many leading medical colleges. The social-mindedness of Dr. Phillips is indicated by the fact that he was instrumental in organizing the American Federation of Organizations for the Hard of Hearing, which has done much for promoting the study of lip

reading by the deaf and in making easier their lot. The personal popularity of Dr. Phillips and his recognized ability as a worker and organizer in scientific medicine indicate that great advancement may be expected during his leadership of the American Medical Association.—*Jour. A. M. A.*, June 6, 1925.

At the monthly meeting of the **Charlotte Dental Society** held at the Rozzelle Ferry Roadhouse on the evening of June 18th, Dr. S. B. Bivens was elected president. Other officers elected were Dr. E. S. Hamilton, vice-president; Dr. W. W. Abernathy, secretary, and Dr. R. E. Petree, treasurer. Dr. Jno. R. Pharr served as president the last year.

The 306th Medical Regiment of which **Col. J. W. Long** is commanding officer, was ordered to Carlisle for the period July 5-19. This organization is a part of the 81st Division, with headquarters at Knoxville and draws its personnel from Tennessee and North Carolina.

The Lincoln Hospital, established at Lincolnton by Dr. L. A. Crowell, in 1907 and now conducted by Drs. L. A. Crowell, W. F. Elliott and G. B. Crowell, is soon to have a 30-room addition to take care of the rapidly increasing demands on its accommodations. The plans are in the hands of a Charlotte architect and work will be begun at an early date.

MISCELLANY

Osler's Challenge to Anti-Vaccinationists.

Following is the famous challenge of the late Dr. William Osler, issued to the anti-vaccinationists of England a number of years ago, and never taken up by those to whom it was addressed:

"I do not see how any one who has gone through epidemics as I have, or

who is familiar with the history of the subject, and who has any capacity left for clear judgment, can doubt its value. Some months ago I was twitted by the Editor of the *Journal of the Anti-Vaccination League* for a 'curious silence' on this subject. I would like to issue a Mt. Carmel-like challenge to any ten unvaccinated priests of Baal. I will go into

the next severe epidemic with ten selected vaccinated persons and ten selected unvaccinated persons—I should prefer to choose for the latter—three members of parliament, three anti-vaccination doctors (if they could be found) and four anti-vaccination propagandists. And I make this promise—neither to jeer nor jibe when they catch the disease, but to look after them as brothers, and for four or five who are certain to die, I will try to arrange the funerals with all the pomp and ceremony of an anti-vaccination demonstration.”

We are for the same challenge.

The Menace of Smallpox

Dr. Louis I. Harris, Director of the Bureau of Preventable Diseases, has forwarded the following report which emphasizes the value of vaccination:

The diagnosis of smallpox, as has been pointed out on numerous occasions, is not an easy matter, and physicians are therefore urged not to assume the grave responsibility of acquitting a case in an adult with the diagnosis of chickenpox until they call upon the expert diagnosticians of the Department of Health to assist them.

A case in point is one where, recently, a physician practicing for a number of years in this city, saw a patient whose condition he diagnosed as chickenpox. In consequence of this diagnosis, the usual smallpox precautions were omitted, and, as a result, out of the eleven cases of smallpox reported in this city since the first year of the year, eight secondary cases occurred among individuals exposed to the patient who was mistakenly thought to be suffering from chickenpox.

If it had not been for this very unfortunate error in diagnosis we would have had but four cases of smallpox all told, in this city, during the current year.

In connection with this case of unrecognized smallpox, an exceedingly interesting history is given by one of the first of the group of secondary cases. The patient, a very intelligent man, informed us that he started out to visit the unrecognized primary case. Upon

arriving at the apartment, he knocked at the door and was bidden to enter. He opened the door and while standing on the threshold noticed that the patient's face showed a marked eruption of “pimples.” Her appearance was so striking that he felt very ill at ease, and making his apologies for not entering, he felt forthwith. He was at all times at a distance of a number of feet from the patient, except that he touched the door-knob which the patient may perchance have handled, but had no direct contact whatever with the patient. Yet, two weeks later he was down with smallpox.

It is interesting to note, that of the eleven cases of smallpox which have occurred in this city since the first of the year, six had never been vaccinated before; one had never been successfully vaccinated; two individuals—one thirty-eight years, and the other forty years of age, had been vaccinated in early childhood; and the remaining two gave a history of having been vaccinated at some time in the past, but there was no evidence of a scar.

Including the group of eight persons who acquired the disease as the result of contact with a case erroneously diagnosed as chickenpox, there were two cases among colored persons who lived in the area where the overwhelming majority of smallpox cases have been found in the past two decades, namely, the upper Harlem district.

The first case reported during the year occurred in a girl 14 years of age who was attending a school and who had never previously been vaccinated.

Fortunately, the great majority of our **foreign-born** population, and the children of such persons, have either been vaccinated before arriving in this country or have submitted to this protective measure as a matter of course. (and yet we call them inferior.—Ed. S. M. & S.)

The Physiology of Alcohol.

Any one who attempts to arrive at an unbiased conclusion regarding the physiologic action of moderate amounts of alcohol on the human body realizes promptly that the decisive authentic information on the subject is surprisingly meager. There is no dispute about the ill effect of excessive indulgence in alcohol on individual and national efficiency; the habitual drunkard is a menace alike to himself and to the society that tolerates him. Yet many persons throughout the world, to whom the designation of drunkard could certainly not be applied with propriety, use alcoholic beverages moderately and secure therefrom not a little comfort and pleasure. It is a debatable question whether or not the enjoyment of the social glass must be proscribed because a large class misuse alcohol. The moderate users are frequently represented as those those who "use" alcohol, as distinguished from those who "misuse" alcohol.

Physicians cannot avoid a consideration of the alcohol problem. It not only confronts them as it does every thinking person, but often is actually "thrust" on them by the exigencies of their daily routine. Probably the most debated feature centers in the inquiry as to whether alcohol can in any sense be regarded as a food. This is a question that demands a defensible answer regardless of the inquirer's personal habits, social proclivities or political convictions. Such a decision cannot be formulated on the basis of offhand impression, hearsay evidence or subjective reasoning. It demands and deserves scientific analysis. Consequently, many persons will be interested in the statement of a physiologist having unusual qualifications for arriving at a conclusion when he asserts at length that the experimental evidence about the debated food value of alcohol "is extensive and admits of no controversy." Among the clearly proved facts that further study is not likely to modify to any degree, F. G. Benedict, the director

of the Boston Nutrition Laboratory of the Carnegie Institution of Washington, includes the observation that alcohol in not too large doses—that is, about 72 gm. daily—is oxidized in the human body, and the energy that it furnishes in its oxidation may contribute to keeping the body warm, to replacing other nutrients in the diet, and possibly to the performance of muscular work. Seventy-two grams of alcohol, contributing 500 calories to the daily ration, are more completely burned than 500 calories supplied in the form of almost any other substance, with the possible exception of pure sugar. This has been demonstrated clearly by actual measurements of the heat output of man inside a respiration calorimeter, first, when subsisting on an ordinary diet, not containing alcohol, and then under exactly the same experimental conditions when 500 calories of fat or carbohydrate, or both, were replaced by 500 calories of alcohol.

Viewed in the foregoing light, it might seem as if alcohol, being a food, should be physiologically permissible, if used in moderation. In attempting to meet the crux of the situation by determining the physiologically "permissible" amount for daily use, science has also recently indicated that something more than the danger of incipient intoxication must be taken into account. All the more recent psychologic tests with alcohol ingested even in small amounts agree in the demonstration of lessened organic efficiency resulting from the absorption of the substance. From two to four hours after moderate doses of alcohol, practically all persons are affected with general depression of neuromuscular processes, lessened visual acuity and lessened motor coordinations of eye and hand. Benedict argues that in assessing the value of alcoholic beverages for the use of mankind, the true scientist may not disregard the obviously beneficial and seemingly legitimate phases of its effect on man. He must give recognition to the fact that, used in moderation, besides being an easily digestible source of calories, it results in a great deal of gratification and pleasure

to enormous numbers of people, giving them relaxation at times and again, by releasing the inhibitions, a stimulus. Nevertheless, it seems certain that at any time when one is confronted with a task that calls for a clear head, a keen vision and a steady muscle, there is no "permissible" dose of alcohol.—*Jour. A. M. A.*, May 30, 1925.

Problem of the Near Deaf and the Deaf

In New York some New York otologists, with others interested in the problem, instituted an organization in 1910, which was designated the New York Organization for the Hard of Hearing. From this parent organization other clubs were gradually created, until at present many of the larger cities throughout the Union have such clubs. In 1919 these organizations, which now exist in thirty-five cities, formed a national organization known as the American Federation of the Organizations for the Hard of Hearing. This federation is an active, enthusiastic corporation composed of a body of intellectually alert American citizens who know what they want and are adopting the best methods to attain it. Looking into their faces, as I did in addressing them last year in their annual meeting, one could not but be impressed with their earnestness of purpose and desire for advice and direction. C. W. Richardson, Washington, D. C., (*Journal A. M. A.*, June 6, 1925), urges that all otologists should be in touch with the organization in their immediate community, or with the federation, in order to aid in guiding their work and assist them in shaping their course. The conservation of hearing is only a method of applied preventive medicine. Laymen should be taught through semi-annual and lay journals the methods to be pursued with regard to this conservation. An important field of investigation, of great interest to otology, has been undertaken under the auspices of the National Research Council, of the resident and day schools for the deaf of the United States. The funds have been supplied by the Laura Spelman Rockefeller Foundation.

Blood Pressure Changes Accompanying Coronary Occlusion

In the absence of hemorrhage, shock, infectious disease and excessive toxic or metabolic disturbance, such as diabetic coma, and with the presence or history of severe pain of cardiac origin or distribution, Leslie T. Gager, New York (*Journal A. M. A.*, June 6, 1925), says that the fall in arterial tension will commonly be due to acute myocardial insufficiency on the basis of coronary occlusion. Four cases are cited to show the value of a series of blood pressure readings, when coronary thrombosis is in question. Gager further says that: The recognition of a sudden fall in blood pressure, following an attack of severe cardiac pain, derives its importance from the fact that coronary occlusion brings about this state of hypotension by striking directly at the cardiac output. Following the thrombus formation, or the lodgment in an embolus, in a coronary artery, there occur (1) infarction of the heart muscle to a degree corresponding with the site of obstruction, and (2) impairment or loss of ventricular function according to the area and extent of the infarction. Since the left coronary artery, or its branches, is commonly involved, it is usually the greater circulation that offers the evidence of cardiac failure. In the milder instances of occlusion, or in cases in which the left ventricle escapes, little or no variation in peripheral arterial tension may occur. It is Gager's contention, however, that blood pressure readings, taken daily or even oftener, form an important detail in establishing the diagnosis of coronary occlusion. It is a method of observation at the command of every practitioner. A sudden fall in arterial tension, following severe cardiac pain, rests on the physiologic basis of infarction and myocardial insufficiency following an occlusion.

The Tenth Revision of the United States Pharmacopoeia Official, January 1, 1926.

The Board of Trustees of the United States Pharmacopoeial Convention has

selected January 1, 1926, as the date on which the new Pharmacopoeia becomes official. It cannot be definitely stated just when the book will be on sale but the Trustees are confident that the new revision will be available in ample time to supply the schools of pharmacy with the new standard for use during the session of 1925-26. Just as soon as the U. S. P. is available, announcement will be made by the sales agent, J. B. Lippincott Company of Philadelphia.

Four decades ago, a group of twenty-four American cities had typhoid fever deathrates which ranged from 40 to 60 deaths per 100,000 of population annually. In recent years the rate for these cities averaged around 3 per 100,000! In fact, in Fall River, Massachusetts and Hartford, Connecticut, there were no typhoid fever deaths in the year 1924. Eighteen cities in 1924 had typhoid fever deathrates less than 2 per 100,000!

Pending deep-seated changes in modes of rural life in the Southern States, it seems that the largest results in typhoid fever control could be achieved by statewide effort for anti-typhoid inoculation. The Southern States have been receiving more and more adequate health service in rural communities and while this has been accompanied by marked improvements in domestic sanitation of farm communities, and by the protection of the water supplies of cities and small towns in these States, there is still a considerable typhoid fever hazard to be combatted by means of the agency of protective inoculation.

The present note is part of a more complete survey of the typhoid fever problem now being made in this office and which we plan to publish within a few months—Bul. Metrop. Life Ins. Co.

"Durham has the name of being the dope capital of the United States," declared Judge Isaac M. Meekins, in federal court here today, as he sentenced four defendant doctors of Durham who had pleaded guilty to violations of the Harrison anti-narcotics law. At the same time, continued the jurist, there is no reformation in cruel punishment. The four physicians were fined \$250 to \$1,000 and prayer for judgment as to jail sentences continued.

During the trial here, one of the six physicians, Dr. Michael Roberson, was found guilty, one mistrial resulted and four pleaded guilty. Judge Meekins today set aside the verdict of guilty as to Dr. Roberson and granted a new trial.

Drs. E. H. Bolling, Ira A. Stoner, William A. Strowd and N. P. Boddie were fined today after their pleas of guilty of illicit dealing in narcotics had been accepted and judgment as to prison sentences was continued. Bolling was fined \$1,000 to be paid immediately, while the other three were fined \$250 each to be paid in 12 monthly installments. It was perhaps the first time that fines had been imposed in the local federal court on a monthly payment plan.

A direct outgrowth of the trial here was seen today in a statement issued from the state board of medical examiners in session here that those found guilty of violating the Harrison act would be deprived of their licenses to practice. It was asserted that the cases of the six Durham physicians was under advisement and that final action on them would depend on the outcome of the legal proceedings.—Charlotte Observer.

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PSYCHONEUROSES IN RELATION TO MILITARY SERVICE*

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Mr. Chairman, ladies and gentlemen: It is perhaps quite natural but very unfortunate that in times of peace we do not prepare for war. That single fact was responsible for a very great majority of the psychoneuroses in war. I think we owe a tribute to men like Colonel Dunn and Major Jones, who everlastingly keep at this business of preparation, because if there was any particular branch of the service that was in need of preparation and lacked it more, it was the medical service.

I am not going to burden you with a rehash of the many discussions of the so-called war neuroses. It would be presumptuous upon my part to attempt to do that. I will just briefly refer to some of the fundamental principles which underlie the neuroses in general, from which the war neuroses do not differ in any great particular.

All of the neuroses are based upon a conflict in which the personality is engaged, which makes itself manifest outwardly as the psychoneurosis. These conflicts occur in peace just as frequently and overcome the individual just as decisively as they do in war. The man who is having domestic trouble of a serious nature is at war just as much as the man who is fighting in a serious engagement. It is just a question of degree and of the setting in which the conflict takes place.

The setting in which the war neuroses developed was perhaps more striking than in peace, but the psychological factors are the same.

That is all preliminary to bringing out one fact. If anything has occurred in recent years to give the lie rather strongly to the principle that all of abnormal psychology is based upon the question of sex, the neuroses that occurred in combatants during the recent war served to absolutely modify the radical principles of the Freudians. (Applause).

The first one of the Freudians to agree that the raw, basic instinct of self-preservation, or the emotion of fear, the attempt to preserve the personality, was unquestionably the underlying factor in the real war neuroses, was Freud himself. I refer, of course, to those neuroses which occurred in combatants.

I think that is an important thing because it helps those of us who are going to be charged with the responsibility of selecting the soldier and the officer with an eye to preventing the incidence of the war neuroses, to understand what we must look for in the prospective doughboy and more particularly in the officer.

The two instincts which we have to deal with chiefly in the neuroses of combatants are those of self-preservation and the instinct of pugnacity. The emotional disturbances growing out of reactions to these instinctive drives result either in fear and a cowardly fleeing from the conflict, if the instinct of self-preservation is too strong; or, if the instinct of pugnacity is not strong enough, in abject surrender.

These are the high spots in a brief discussion of the production of the neuroses. It is just a question of distur-

*Read before the Seventy-second Annual Meeting of the Medical Society of the State of North Carolina, Pinehurst, April 28 and 29.

bance of certain very simple, basic instinctive reactions.

Now, all of these remarks refer particularly to the neuroses occurring in those who do the actual fighting. A classification might be made of the neuroses occurring in combatants and those occurring in non-combatants. There are those who never got near the front at all who also developed neuroses. The war veterans' hospitals are filled with psychoneurotics who never left these shores. It is in just these cases that the principles underlying the psychoneuroses in general apply even more forcibly. They were simply inadaptably individuals, unable to toe the mark when faced with responsibility or a new situation pregnant with unpleasant possibilities. They have given this country a tremendous burden to carry and have cost the Government of the United States untold millions, and will continue to do so during our generation and part of the generation following.

The psychoneuroses in officers who were non-combatants deserve special consideration. Maladjustment was the chief factor causing the neuroses in the officer. There were many men who volunteered and served as officers in the Army, both as medical officers and line officers, who were driven to that act by a series of difficulties in their civil life.

There were a number of men who went in as a way out of family difficulties. Of course, the Army didn't clear these difficulties up but added others, and these individuals who were unable to adjust the original difficulty were faced with another group of emotional factors and reacted by a neurosis.

Some of the officers resented very strongly the slowness in promotion, or the entire lack of promotion in some cases where it really was deserved. I think Colonel Dunn will remember a medical officer who boarded with us for a number of months in one of the Hospitals in Italy the basis of whose neurosis was a very keen resentment against everybody who had been his superior because he felt they had not aided him to promotion. It was rather an understandable thing, too. This man

came from a small town. He was over 40. He had gone in as a Lieutenant, had been in a long time and for some reason had not been promoted. He was very much disturbed at the prospect of returning to this little town still a Lieutenant after so long a time overseas. This disturbed him so much that he presented the general picture of the psychoneurotic with which I will not burden you. There was a question in the mind of Colonel Dunn, who was rather material about some things, whether this man was altogether genuine or not, but I was convinced that his neurosis was a compromise between his conflict and his injured personality.

Now these types of maladjustments, these psychoneurotic individuals who never actually fight, who never got near the front, present an entirely different picture from the three groups of neuroses occurring in actual fighting men. There one dealt first of all, most commonly in the doughboy, with an actual major hysteria, with all of the symptomatology of that condition.

Then there was a fatigue neurosis or exhaustion psychosis. Boys who have been underfed, who have slept very little for days, sometimes for weeks, who have been subjected to fear and real danger, who have lived through thrilling and horrifying experiences, used to come back in the throes of a delirium or a stupor or an actual exhaustion psychosis; but they cleared up fairly rapidly and generally were very anxious to return to the front and often did so. I saw no American boys of that type, but I saw quite a number of cases of that character in Italian soldiers when I was on detached service with the Italians.

Then the third type, usually occurring in the officer, was the anxiety state. A keen, intelligent officer, who recognized very vividly that he was afraid but realized that he had to carry on so as not to communicate his fear to his men, as the result of this conflict usually began to sleep badly, after a time developed a very distressing state which in many cases did not clear up until long after the Armistice.

These pictures are readily under-

standable. They are very sharp, decisive reactions, which are clear-cut and entirely different from the maladjustments occurring in non-combatant men and officers.

This is all preliminary to the prevention of the psychoneuroses. I think the main factor in preventing the psychoneuroses rests with the draft boards (if we ever have them again), the medical advisory boards, with the medical officers in the camps, and, above all, the neuro-psychiatrists.

I think the big mistake in the beginning of our entrance into the war was the great drive to get men without giving consideration to the desirability of selectivity. I think the Government would have been saved a great deal of trouble and a tremendous lot of money if the boards had exercised a little more judgment in the matter of selection of the men subject to the draft when they came before them for examination.

In the last analysis, the choice should fall really on the neuro-psychiatrist. I am not trying to glorify the neuro-psychiatrist, but by training he is the man who is more likely to properly size up the prospective soldier and officer and recommend the specialization of their activities.

The question of periodical military training for the prospective soldier and officer is extremely important from the neuro-psychiatric standpoint. It is absolutely out of the question to take a built-up personality at 21, one which has never had rough dealing, one whose repressions are few and whose power of free individual expression is great, and in a few months expect to make him a good soldier. It simply can't be done.

The way to make a good soldier, it seems to me, is to have some sort of a plan, as they have in some of the European countries, of periodic compulsory, intensive military training applicable to every one with the exception of those upon whom it would quite obviously be impossible to impose these privileges.

It is impossible, too, to expect a boy who has been brought up in a sheltered way in a fine home, with all the comforts, with unlimited opportunities for

pleasure, with the consequent physical unpreparedness, to go into camp and compete with a boy who goes to camp every summer for four or five weeks and is accustomed to camp life and the self-discipline it imposes, and expect both to make equally good officers.

So that a level in all of these things would have to be reached and a fairly uniform standard set, and it seems as if compulsory, intensive, periodic military training were the only possible solution. Whether, of course, the politics of this country makes such a thing possible is a question, but its desirability, I think, is quite obvious.

The same thing applies to military training particularly for medical officers. It does not seem to me that the Army wants or even needs the ultra-scientific doctor. I am quite sure the Surgeon General's office was embarrassed during the war by the offer of help from men who had no conception at all of military duty and no conception of military discipline. Some use should be made of men of this type in the capacity of consultants, it seems to me, perhaps without rank. The title of "Contract Surgeon" I think fills that need fairly well.

However, I want to emphasize my own feeling which agrees exactly with that of Major Jones, that medical officers should be intensively and periodically trained so that their duties will be perfectly well-known to them in case an emergency should arise.

Now a word as to the place of the neuro-psychiatrist. Upon every draft board, every advisory board in every camp, a trained neuro-psychiatrist should sit. The doughboy who presents himself might not in his opinion make a very good member of a fighting unit but he might do very well, for various reasons, as an engineer or as a pioneer, or he might be used in one of the allied trades during the war emergency. That is the greatest service a neuro-psychiatrist should perform.

I think it would be very much more important to realize frankly that anyone who presents himself during the operation of the draft may not be a

good prospect as a soldier and eliminate him immediately, placing him in some other service, than to have that boy go into the Army and break down as a result of maladjustment, as so many of them did and as so many of us knew they would when we were in this hysteria of hurry to get boys for our Army.

So, too, with the officers. The Infantry officer, I think, is almost born and not made overnight. Too much intelligence is not always a requisite in an officer, because those who have too much intelligence and imagination are not always able to execute orders. In the Army it used to be said, perhaps with a great deal of truth, that it is really not one's business to think but to obey, and those who are too sensitive and whose intelligence is too keen and whose power of self-discipline is not fully developed, might better not serve as line officer but perhaps in some other capacity.

I believe that every medical officer should have a neuro-psychiatric report attached to his record when he enters the Army. The influence of such a

medical officer with the regimental officers particularly should be tremendous. The influence which he could exert in maintaining and increasing morale is extraordinary. The depressed, morose, shut-in type of medical officer is absolutely out of place with an active combatant outfit. He might be better off in some other branch of the service.

The neuro-psychiatrist is also of tremendous importance in sitting upon the promotion board. When the line officers and medical officers come up for examination for higher grades, the neuro-psychiatrist should present a report, and it should receive great consideration. In the Army, as in civil life, the higher the grade the greater the responsibility. Therefore, the more necessity for a neuro-psychiatric inventory in the higher grades.

In closing, the prevention of the psycho-neuroses should be our aim, not a re-discussion of the war neuroses which we all understand so well, and the chief point to be considered in the prevention of the psycho-neuroses is proper preparation. (Applause).

THE PASSIVE FUNCTION OF THE PATIENT*

EDWARD J. WOOD, M.D., Wilmington

At such a time as this I cannot but wish that I might be one of you young men just beginning a term of service under conditions which offer you whatever you may seek in the way of training for the future and usefulness for the present.

In the wonderful life of Sir William Osler by Harvey Cushing which is just off the press we are given a splendid picture of the Montreal General Hospital about 1870 when Osler first entered it much in the same capacity as you enter this hospital today. At that time the hospital in Montreal was about

the same size as this, with relatively similar conditions of equipment and records. A survey of the two institutions shows a striking parallel throughout. Osler's rule of life then as throughout his whole clinical career was "Observe, record." He did each day's work without a thought of the tomorrow or the yesterday. At the end of his stay there he had wrought such a change in that hospital that it became the great beacon light shining throughout the whole of Canada, as well as the whole continent. When he became the great Professor Osler of Johns Hopkins Hospital some years later he harked back to those observations made in Montreal which he had so diligently recorded. From this data,

*Remarks to New Internes at the Beginning of the Summer Service at the James Walker Memorial Hospital, Wilmington, N. C.

which represented an accumulation of the brief records of many days made at small loss of time, but made *at the time* and not postponed to some other day when the task becomes too great and the delay in recording disastrous, he wrote Osler's Practice of Medicine, the most successful medical book of all times. He saw the sale of that book reach 100,000 soon after its appearance in one of the later editions, and the returns from it were sufficient to permit him to retire on the meager salary of the Regius professorship at Oxford. There was nothing phenomenal in this achievement: he had no more brains than you have; he had no more or better opportunity than you have here and now; he did have industry and diligence in small things never putting off to tomorrow the work of today and living today as though it were his first and his last. We will never find in any chapter of medicine a more worthy exemplar and with it all a man more human, or more frail, or more tried in all things as we are.

When an individual is sick, if he is a guest in a great hotel, as for example the Pennsylvania in New York, he can be removed to the hospital portion of that hotel, and if need be can be operated on there doubtless with success, and make a prompt, satisfactory and complete recovery. In this event the function of that patient begins and ends with his recovery. If, on the other hand that patient had been admitted to this or some other hospital the whole situation is changed. The result to the patient probably will be the same, that is satisfactory; but this is not the end of it. If the medical man does his part every case of sickness is a contribution to the sum of medical knowledge and a case contributing nothing lays on the doctor the guilt of having hid his talents in the earth. So every patient should serve two passive functions; first that debt due himself of getting well; second, that debt due to society in that his suffering if properly used may aid in preventing

and alleviating the same malady in others, many of whom may be unborn and indeed of the same flesh and blood.

It is not so great a problem to convince a young man of the value of observation. It is a much more difficult thing to have him learn early in his professional career that his observation without record of it is largely lost, the greatest of all extravagance. No case can be properly studied without recording those things observed and the record is as valuable for a review at the end of the examination as it will be years later. Recording can be done very promptly if done at the time, and in the very making of the record superficiality is prevented. A record to be of value must be made today, not tomorrow. Over night much of the finer shades will be lost and there is always a doubt if it will ever be made at all.

This hospital is better situated than any hospital on the Atlantic seaboard for a wealth of diversified clinical material. At this point the subtropics and the temperate zone meet and consequently practically all tropical conditions are found without a sacrifice of the opportunity to see all the conditions of the temperate zone. In this your opportunity will be unique. There is no reason why one of you or each of you cannot make of your life another Osler by doing each day's work as though it were a complete lifetime, the first and the last day, the day on which you would like to be judged, the day you can leave behind without regrets and the day filled with the satisfaction that your own attainments have been added to and that suffering and even death have been lessened by your efforts.

I hope I may be pardoned for drawing from my own experience in talking with you. When I make a record of a case the thought with me always is: If my son or my grandson reads this record a quarter or a half century hence will he have to blush with shame because of the careless performance of

my present day's small task? A hospital record from now on will be a permanent thing destined to furnish data valuable or valueless accord to the work of the man of today, a reproach or a credit as the case may be, a credit or a reproach to the writer and his period as he wills it. Surely a hospital without records is the finest type of extravagance. The record

soon becomes more valuable than the hospital itself and on these records the medicine of the future will be planned and built. Each record before your name is affixed to it should be as full, as accurate, as complete as the case presented by the conscientious lawyer to the Supreme Court. Until this ideal is attained the hospital cannot perform its full function.

SPECIFIC SUBSTANCES OF THE TUBERCLE BACILLUS*, **

EDWARD W. SCHOENHEIT, M.D., Asheville

The success of preventive medicine and the improved sanitary conditions of civilized countries stand in great contrast to the slow advance in the knowledge of how the pathogenic microorganisms affect the organism, and the means by which the healing of disease and the development of resistance, or immunity, is accomplished.

The toxic substances which cause the symptoms of most of the infectious diseases are not known. The supposition that the split products of protein substances cause the symptoms cannot be substantiated by the most recent physical and chemical methods. The cause of the fundamental differences between the pathogenic and non-pathogenic micro-organisms, the means by which the former succeeds against the defensive mechanism of the organism, which defense is bound to life and immediately disappears after death, are not yet known.

The old discussion regarding the humoral and cellular theories of immunity has not been decided. In recent years Besredka of Paris contested the importance of serum antibodies even in cholera and typhoid fever where their role seems to be best founded. On the other hand, the importance of leucocytes is mainly not as highly regarded, more stress being laid on the fixed tissue cells,

particularly the reticulo-endothelial system. But if fundamental principles cannot be established, and even though their outlines seem less visible than they did twenty years ago, very important contributions have been added to all branches of our science. We shall enumerate only a few which are closest to the problems of which we shall treat later. The most important seem to be the results of investigations of Landsteiner, Wells¹ and others whose works indicate that the specific properties of the antigens depend upon their chemical composition. The importance of their physical condition, such as the colloidal behavior, seems to be very slight. From the same investigators we have learned that a few effective molecular groups determine the specific properties of the entire and complete protein molecule.

Another interesting fact is the discovery made by Forsman² that antigens which build hemolysins against sheep red blood cells are widely distributed among the animals without any connection with their natural relationship. For example, guinea pig kidney extract or horse kidney, injected into a rabbit, induces the appearance of sheep hemolysins; but by injecting the organs of a rabbit or man into other animals, sheep hemolysins cannot be formed. A special interest attached to this phenomenon is that the specific substance contained in the organs is soluble in alcohol, but the alcoholic solution alone will not produce antibodies and merely reacts in

*Read before the Buncombe County Medical Society, May 18, 1925.

**From the von Ruck Research Laboratory for Tuberculosis, Asheville, N. C.

the test tube with them. For the production of antibodies the presence both of the alcohol-soluble part and the protein part of the antigen is necessary. For tuberculosis problems it is interesting that the tubercle bacillus has also an alcohol soluble specific substance.

A certain similarity to the above described heterogenic antigen is seen in the substance described by Avery and Heidelberger,³ which is found in pneumococcus cultures and in the urine of pneumonia patients. This substance consists of carbohydrates, not of proteins, and reacts in the test tube in the extreme dilution of 1—5,000,000 with pneumococcus serum, but up to the present time no physiological or immunological effect of it could be demonstrated in animals. These two substances of the heterogenic antigen (alcohol soluble and protein) and the soluble specific substance of pneumococci constitute a new type of specific substances, specific without affecting the animal organism, and, according to the conception of Landsteiner, they constitute only a detached part of the whole antigen, that is effective in the animal organism.

The multiplicity of the antigens in the animal organism and in the bacterial cell has been a supposition for a long time. More recently it has been established that the chemically differentiable proteins of the blood serum are different antigens.¹ This formerly remained unnoticed because at that time chemical separation was imperfect. In the bacterial cell it has been proven in many cases that the cilia form a different antibody in animal organisms from the endoplasm, and each reacts separately. It has even been shown that this is true for bacteriolysis as well as agglutination. In connection with this, attention has been called to the fact that in natural diseases bacteria usually have no flagellae—for example—in typhoid fever. On the other hand, in bacterial vaccines the ectoplasmatic antigens are mainly effective. The most significant observation in this line,—which we hope will be strengthened by future investigations,—is that it was possible to iso-

late a substance from pneumococci different both from the formerly mentioned soluble specific carbohydrates substance and the endoplasmatic protein substances, which does not form any of the usual antibodies in animals, but is able to produce a strong type, specific immunity.⁵

Another significant fact for the knowledge of the of the nature of bacterial antigens was the discovery of the effect of formalin on bacterial toxins.⁶ Exposed to formalin at 37 degrees C. most of the toxins,—tetanus, diphtheria, botulism, even cobra venom and ricin,—lose their toxicity, without losing their immunizing properties. Therefore there is a possibility of developing a strong immunity with none or minimal reaction on the part of the animal organism. This formalized toxin has nothing to do with Dryer's tubercle bacillus vaccine which was boiled with concentrated formalin.

The new observations we have mentioned constitute only a part of the recent developments of immuno-biology, but they seem significant in that the conduction of a careful chemical and immunological study of the microorganisms can promise valuable results, and it is worth while attempting it with the modern methods of biological chemistry and immunology. Surely there are other ways of research; perhaps other ways may prove more fertile. We have been unable to get away from the impression that perhaps tubercle bacilli growing upon the surface of glycerine broth do not contain all of the bacillary substances which are active in the animal organism, but a certain limitation is necessary; and during the last months of the life of Dr. Karl von Ruck he and Dr. Dienes decided that a further investigation of this should be attempted in our laboratory.

A detailed immunological analysis of the bacillary cell is accompanied with great difficulties, due to the lability of the antigens and their low resistance against chemical and physical influences. This is the main reason why the investigations of the laboratory are far from being completed. The first fact estab-

lished by Dr. Dienes and his associates was that the specific substances which have, for a long time been known to be present in extracts obtained with lipoid solvents from tubercle bacilli, are well distinguishable from the protein antigens.⁷ This was supposed to be the case by Much and by several others, but it was not generally admitted, and was not proven. We were able to demonstrate:

(1) That the antibodies which react with the lipoid substances can be taken away from an immune serum separately from the antibodies which react with the proteins; (2) that the lipoid free proteins do not build any antibodies reacting with the lipoids; and (3) that the lipoids are able to build antibodies which react only with lipoids and not with protein substances. Due to these observations the separate antigenic nature of the lipoids was established. But what kind of substances are these specific lipoids? Through a careful purification process we were able to obtain preparations active in a dilution of from two to ten million according to the sera used, and because we could never get a preparation of greater potency, we believe that this purified material contains a considerable amount of pure specific substance.⁸ This product contains only 0.2-0.3 per cent nitrogen which is one-sixth of the nitrogen content of lecithin. It also contains up to 25 per cent carbohydrates and 2.5 per cent phosphorus. It is surely not identical with any known phosphatide, and most likely we now have in hand a new class of phosphorus and fatty-acid-containing substance. The biological and immunological significance of this substance cannot be established, but the presence of similar substances which are widely distributed in the animal organism with specific antigenic effects (first seen in the red blood cells to which we referred in the introduction) makes it quite probable that there must be some effect. Our attempts to find a key to this with the observations on the antibodies formed by this substance in animals have not been

successful. The suppositions of Much, regarding them as the most important constituent of the bacilli for immunization, have no foundation, according to our belief.

We found this antigen in the acid-fast saphrophytic bacteria as well as in the tubercle bacillus,⁹ and could not distinguish between them; however, the protein substances of the tubercle bacillus could easily be distinguished from the proteins of the acid-fast saphrophytes by their serological properties. In recent years Boquet and Negre,¹⁰ pupils of Professor Calmette, published results from Calmette's laboratory, according to which the alcohol soluble antigens were able to increase considerably the resistance of experimental animals against tuberculous infection, and they claim to have obtained very good results with it in the treatment of patients, especially cases of lupus. However we shall have to see further experimentation before drawing any conclusions concerning this.

In our investigations of the protein substances¹¹ we were unable to establish differences between the separate fractions of protein substances which we obtained from the tubercle bacillus, but our negative results are not significant. A result of our investigations is that except for the previously mentioned lipoid antigen, all the specific effect of the bacillus seems connected with their protein substances. This conclusion was drawn because of the close parallelism of the specific effectiveness and the content of heat coagulable protein substances. The specific effect of the preparations was estimated by skin testing and by the complement fixation reaction *in vitro*.

The close parallelism of the two specific reactions, in one of which the antigenic effect in the complement fixation test is generally regarded as due to the proteins, if specific lipoids are not present, gives a special value to their quantitative correspondence to the amount of protein substances. The preparations examined were ground up tubercle bacilli, the watery extract 0.02 per cent, 0.

27 per cent, 1 per cent sodium hydroxide extracts, and the bouillon culture filtrates. After coagulation of the proteins, either no specific effect whatever remained in the filtrates, or we were able to establish with especially adapted chemical methods, that the effectiveness of the extract after the precipitation of the proteins with heat and acetic acid is not more than that which corresponds to the traces of protein which always remain in solution by this method of precipitation. From these two observations (1) the parallelism between the specific effect and the protein content of the preparation and (2) the disappearance of the specific effect with the precipitation of the proteins, we concluded that the specific effect of the bacillus, besides the formerly mentioned alcohol soluble substance is bound to the protein substance of the bacillus. Because of the question immediately arising from this conception—what kind of substances are the specific substances of old tuberculin which cannot form antibodies in animals or produce anaphylactic shock in moderate doses, and are so resistant against heat?—we examined the specific substances contained in the culture filtrate of bouillon cultures.¹² We have found that they are precipitated like the protein substance, and the precipitate obtained in a careful manner strongly produced antibodies in animals. If the bouillon filtrate was heated before the precipitation was made, no antibodies could be produced. This observation according to our judgment takes tuberculin away from the exceptional position among bacillary substances of specific activity, and shows quite clearly that the specific substance of old tuberculin is a protein in a denatured condition. In correspondence to our conception are some recent studies which show that the iso-electric point, that is the acidity of the precipitation point, is the same for those specific substances of old tuberculin as is the iso-electric point of the proteins of the tubercle bacillus. We found that the effectiveness of the preparations in the sensitized animal and in the comple-

ment fixation reaction runs parallel. This has to be taken with some reserve because this parallelism is seen only in the same strains of bacteria, and is probably quite different in different strains. For instance, the acid-fast saprophytic strains have almost the same potency in the complement fixation reaction as the tubercle bacillus strains, but in the sensitive animal they are only one twentieth to one fortieth as effective.¹³ This seems quite natural because if both effects are bound to the same protein molecule, they represent two perfectly independent effects of it.

Our investigations of the specific substances have gone this far at the present time. We do not claim that there are no more substances with specific effect in the tubercle bacillus, and we regard our results as only a beginning. But we believe there will be some advantage in finding out that the tuberculin effect is bound to an antigen essentially alike to active antigens.

The analogy with other observations many times leads to new observations, and perhaps it will be advantageous to put tuberculin back in the same class with the substances really similar to it. The main problem which all investigations of this kind attempt to solve is to find out the specific substance which can produce an immunity, and if any substance comparable to the immunizing substance of pneumonia exists in the tubercle bacillus. For this a careful examination of the bacillary substances and a careful study of how they influence the animal organism will be necessary. Whether this will travel a long laborious road, or will at once fall as a ripe fruit into the hands of some one who will approach the question in the right way, as was the case with the discovery of insulin, no one can tell today.

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THE INCREASE OF MENTAL DISEASES, THE CAUSE AND PREVENTION*

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The relation between mind and body has always been an intensely interesting and baffling problem to all thinking men, but the mystery of this relationship is all the more baffling where the diseased mind is concerned. Ever since the time when Nebuchadnezzar's reason was dethroned, "and he was driven from men, and did eat grass as oxen, and his body was wet with the dew of heaven, till his hairs were grown like eagles' feathers and his nails like birds' claws," the subject of mental trouble has been surrounded by mysticism, and these unfortunates have been considered by many as the victims of some awful visitation, and not as human beings who are ill and who should be treated as other ill persons with the possibility of an amelioration of the symptoms or even, at times, of a cure of the disease. When the world learns more of the maladies of the brain, it will come to regard them precisely as it does other diseases, to consider their manifestations and effects natural, and to treat them candidly. Much misery will be taken from the world when mental ill-health is rid of the old, superstitious survival of demonology.

The greatest progress in medicine has

been in preventive hygiene for those diseases which kill, but we are just entering into the development of mental hygiene which holds some hope for the prevention of mental diseases which do not often kill in themselves, but which maim and mar and, at times, make life burdensome, if not unendurable, for those afflicted by them. It is true that there is no more horrible disease than a mental trouble, or more far-reaching in its consequence, but to the lay mind and to those who have not studied this subject and who have not practically lived with the mentally affected, mental troubles, their nature and extent, have been invested with many terrors that do not really exist, and there are many fallacies concerning insanity which are now beginning to be corrected.

There is no doubt in my mind that there is some increase in insanity. In fact, the higher the scale of civilization the more insane are noted. This has been especially demonstrated by the negroes: the more nearly they approach the standards of the whites the more insanity is found among them. The following statistics will give you some idea of the bigness of the problem:

There are 250,000 patients in hospitals for mental diseases in this country.

Each year 50,000 persons are admitted to these hospitals for the first time.

There are many cases of serious men-

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tal maladjustments that never reach these hospitals.

Patients with one type of mental disease alone (*dementia praecox*) are twice as numerous as persons in all hospitals for tuberculosis.

One man out of every six received into a state hospital for mental diseases for the first time is admitted on account of syphilis.

Over one-eighth of the total expenditures of some states is for the insane; one-sixth in other states.

The expenditures for the insane in some states exceed the amount for any other purpose except education.

The cost of maintenance of persons in hospitals for mental diseases throughout this country is about \$75,000,000 annually.

The economic loss to the United States each year on account of mental diseases is more than \$200,000,000.

The number of hospital beds occupied by patients with mental diseases exceeds the number in use in all general hospitals in this country.

Whereas most hospitals for mental diseases are overcrowded, the average daily number of patients in general hospitals is about one-half the number of available beds.

Colonel Hodges, Director of the Virginia State Chamber of Commerce, recently made the statement that the Commonwealth of Virginia is spending nearly \$3,000,000 annually in the care of the insane, defectives, delinquents and dependents. In fact, he goes so far as to say that nearly 10 per cent of the total population of Virginia is receiving public charity while more than 25,000 are actually institutional cases.

Concerning the increase of insanity, however, there are certain factors which much be taken into consideration in getting the real facts of the matter which make conditions less alarming than they seem. From the statistics given you will readily see that our big problem is not the prevention and cure of tuberculosis, cancer and pellagra, but the prevention and cure of insanity.

First, we must consider that patients

do not die of insanity itself except of suicide, and a comparatively small number succumb to exhaustion and delirious conditions; so there is a steady increase of chronic cases and a far greater number being admitted than are discharged.

Second, a greater number of patients who were formerly kept at home are now taken to hospitals.

Third, there are many more conditions classed as insanity than formerly. This is especially true of senility, which was once looked upon as a consequence of old age.

Dana has showed that more people become insane between the ages of thirty and forty than in any other period, and he calls attention to the fact that more people are now living at that age than ever before, consequently a greater percentage of insanity must be expected.

Fourth, the prevention of infectious diseases, which are being brought under control through laboratory investigations, will materially reduce mental troubles due to these causes. An illustration of this is the fact that spinal meningitis has been reduced from 79 to 29 percent under the investigations of Dr. Flexner of the Rockefeller Institute. This disease has brought about many cases of mental troubles, many of which can now be prevented.

Better methods of taking statistics have also given a more complete record of the mentally afflicted with each census.

Many of the so-called causes of insanity are really but symptoms of the disease and it is rare that one factor is the sole cause of the trouble. A number of causes are usually responsible for the collapse.

Dr. Carlos McDonald has well said that substantially every individual at some time in his life is exposed, in many cases repeatedly, to many of the so-called exciting causes of insanity both mental and physical, yet despite this fact we find that sanity is a rule and insanity the exception. In other words, according to White, the normal mind under the influence of

stress does not become deranged unless from the operation of traumatism, toxemia, or an extreme degree of exhaustion, and not even with anything like the facility of the mind predisposed to disease by bad heredity.

Although alcohol and syphilis are responsible for at least 20 per cent of the insanity in males, even here there is a chance for error; for in many cases of early paresis, manic depressive insanity and dementia praecox, alcoholism is simply a manifestation of the disease and not the cause of the trouble. It is also true that only a small proportion of the syphilitics develop paresis. These facts would lead one to believe that other factors in the individual make-up would reduce cerebral resistance and thus make it the *locus minoris resistentiae* on which the mind produces its effect.

It is stated by Dr. Allen G. Starr that at least 35 percent of mental disorders are due to preventable causes. Others state that this percent should be fifty. Now, concerning the prevention of alcoholism, little can be said which is not being daily discussed by the press, pro and con.

Chief of the essential causes of mental disorder by Rosanall are alcohol, syphilis, heredity and head injuries. In addition to this, of course, are drugs, the toxins of various diseases, digestive disturbances, various bodily disorders, exhaustion, nervous diseases, shocks, worries, etc. Especially should be mentioned just here maladjustments; that is, an individual fails to get into harmonious adjustment with his environment. As before stated, patients with dementia praecox are twice as numerous as patients with tuberculosis.

It is interesting to note just here that since the Gottenburg law was enacted in Sweden in 1855, insanity due to alcohol has been reduced from 25 to 30 percent at that time to from 5 2-10 to 7 19-100 percent in 1899. Again it has been shown that where prohibition laws have been enacted crime and pauperism have been reduced.

Concerning syphilis, the future looms big with hope as to prophylactic meas-

ures for the prevention of the disease and for its cure by early and proper treatment, in this way preventing paresis.

Thanks to the great advances in preventive medicine in recent years by which man has saved man from untold pain and sorrow, the child is beginning to come into his own, and much is being done in a scientific way for his development. It is being recognized universally that first the child must be a good physical machine. Therefore, children are now being examined for adenoids, defective hearing, for defective sight, and for any defect they may have which will, in any way, hinder their progress in school or prevent them from becoming strong and useful citizens. It is proper that physical development should receive attention first, but at the same time it must be borne in mind that mental hygiene is just as important as physical hygiene. For of what avail is the man who is perfect physically, but mentally a dement? He is not only of no value to himself, but he is a parasite on his community.

Too little attention has been given to the development of the play instinct in children. "To acquire alert minds, children must be alert; and the young child can only be alert as his play instinct is aroused. Shut out the play instinct and you stunt his growth; neglect to draw it out, and you lessen his possibilities for strength."

Greece, which has produced the highest type of man the world has yet seen, recognized the great value of play, games and sports. That youth was most honored among them who excelled in athletics, for, to them, the best body signified the best mind.

Dr. Stanley Hall says, "Knowledge for its own sake is a dangerous superstition, for what frees the mind is disastrous if it does not give *self-control*. Better ignorance than knowledge that does not develop a motor side. Body culture is ultimately only for the sake of the mind and soul, for the body is only its other ego." The play instinct should be cultivated because play not

only develops the child physically and mentally, but is a developer of character. Games which require decision and action should be played. Let the child rub up against his fellows and find out his good points as well as his defects, for in this way only can the corners be rubbed off and the nonsense knocked out of those who have been pampered and petted and made to believe by indulgent parents that they alone are the lords of creation. If more cities would follow the example of Chicago, which has spent ten million dollars on playgrounds, the advantage derived therefrom would be incalculable. It has been well said of Chicago playgrounds that "they are the greatest civic achievement the world has yet seen." (Pres. Roosevelt).

Physical hygiene, however, must be co-equal with mental hygiene if we wish to obtain the best results. Our system of education for many years has been based upon the idea that all children have equal mental attainments and there seems to be a mania for "standardization". The so-called standard boy or girl passes through the educational mill apparently unharmed, but those who are precocious or backward or in any way defective suffer. It is of these unusual children that I wish especially to speak.

The idiots and imbeciles should be segregated as early as possible, not only because association with them is detrimental to normal children, but because they are dangerous, especially at the time of puberty. At this time, "idiots animalize, imbeciles become violent, egotistic, coarse and vulgar, and the weak minds grow unsettled in their normal feelings and are without resistance to sensations that now erupt within them." The males often become the violators of women and children; the females frequently become prostitutes, disseminating the vilest venereal diseases, not only crippling the youth of our land and impairing their usefulness, but maiming for life innocent women and unborn children.

Another class of cases is that of the laggards—the repeaters of our schools

—backward or retarded boys and girls. According to Ayres, of the Russell Sage Foundation for the Study of Backward Children, one-fourth of the school children are either not in the proper grade for their age or else they have made less progress than they should have made for the time they have attended school. He states that in fifty-five cities of the United States the cost of repeaters is 14 percent of the total cost of the whole school system. It is this class to whom much attention is being directed today, and, thanks to preventive medicine and to scientific pedagogy, the future looms big with hope for these ugly ducklings, who, although they may take longer than the average child to develop, in many cases find themselves at last, and not only overtake their fellows, but frequently far out-distance them in the race of life. Hutchison has aptly said, "Do not on any account neglect the average 'common or garden child.' He is well worth all the time and care you spend on him; but put all your ablest intellects, your divinest patience, at work on the exceptional—yes, even on the abnormal—child; for among these brambles and tares you will reap some of the finest and most perfect of the wheat." Goldsmith's teacher said that he was the dullest boy she had ever taught; Byron stood at the foot of his class; Darwin was considered "a very ordinary boy and below the common standard in intellect," and Webster, in early youth, was considered a dullard.

Retardation may be due to defective sight, defective hearing, adenoids and acute infectious diseases, or it may be due to too rapid growth at the beginning of puberty, and, at times, even to starvation. Some children naturally develop slowly and have to repeat a grade two or more times, yet they are not defective, and if properly cared for and if properly taught, can eventually take their place with their fellows. It is of the utmost importance not to allow these overgrown boys and girls to become discouraged because they cannot keep pace with their fellows. An effort should be made to find something which

they can do well, no matter how simple it is, for once they get the habit of succeeding—of knowing they can do a thing well—they frequently begin to advance, and finally are able to take their place with children of their own age. Often such children, however, become the butt of ridicule and give up school in disgust. They are undeveloped mentally and become the vagabonds, the tramps, and the derelicts of our towns and cities.

In speaking of retardation, Professor Lightner Witmer says that "any child, the functions of whose brain are not developed up to normal limit for his age, is suffering from retardation, and a youth who arrives at the age of maturity with his brain below the level of functional development which it might have attained if other methods had been employed will carry through life a permanent arrest of mental and moral development." There is no doubt that many children stand at the parting of the ways and if a helping hand is extended they may become useful men and women. If it is withheld and they are neglected they become derelicts or even demented. Surely, common humanity demands that these children should have the best attention medicine and pedagogy can give them. Before they are condemned as hopeless (and some are hopeless), physical examination should be made and every possible defect which could contribute to backwardness should be ascertained; then mental tests should be given to decide whether there is a simple retardation which proper training can overcome, or whether there is a permanent mental defect.

Still another class consists of those children who are not defective, but who are rather "queer or peculiar" and who so frequently develop dementia praecox and constitute the majority of the cases in insane hospitals today. In the observation of several hundreds or thousands of cases of dementia praecox during the past nineteen years at the State Hospital, Morganton, North Carolina, and at Richmond, Virginia, I have been greatly impressed by the fact that, as children, many of them were not defec-

tive, but were peculiarly different from other children—and did not have healthy mental habits—habits which could have formed a sound balancing influence in their conflicts. Many were exceedingly bright and were the wonder children of the school, but were like "straw fires" which burned brilliantly for a minute and all is over. Others were dull and were unable to keep up with their classes. Many were seclusive, day dreamers, reticent, shy and sensitive to a fault and overly conscientious—that is, "prematurely and one-sidedly conscientious." Instead of playing the rough-and-tumble games so dear to most children, they spent their time reading or in the company of their elders. They had no chums and missed the healthy intercourse with those of their own age which would have been a wholesome correction for their abnormal habits of thinking and living. Excessive religious interest was manifested by many and they worried over abstract problems which neither they nor anyone else could solve. Finally they came to live in a world of dreams and good resolutions. They lost sight of the real and "developed an insidious tendency to substitute for an efficient way of meeting difficulties a superficial moralizing and self-deception." A life of action at last became impossible, so fixed had become their abnormal habits, and under some strain which would have meant nothing to a normal individual, a mental breakdown occurred.

The physician and the teacher have a grave responsibility in their relation to the child. If the physician can recognize early symptoms of a mental collapse as he does the early symptoms of a physical breakdown and if he can instruct the parent and the teacher how to manage children who are on the verge of a mental breakdown, many children can be saved from the blighting curse of insanity and many a home can be spared this most awful of sorrows. Not only the children of neurotic parents and those who have had a bad mental heredity, but any child who shows a disinclination to take part in the healthy

sports of childhood, or shows a falling off in his school work, should be examined, and, if possible, the cause of his lack of interest and the cause of his falling off in his work should be ascertained. The fact should be recognized, too, that, at times, retardation may be no more of an evil than precociousness, and that while retardation may only lead to a slowness of progress, precociousness, at times, may develop into insanity or extreme dullness. Defective sight and defective hearing, bad breathing due to adenoids, or any physical defect should be remedied. The school life of many a child has been burdensome and his adequate preparation for life's work has been seriously impaired by physical defects which could have been remedied so easily had proper care been taken at the right time.

If a child is seclusive, shy and sensitive, if he is easily tired, irritable, nervous, has persistent headaches and takes no interest in the ordinary pursuits of childhood or shows a falling off in his school work, it is often best to take him out of school, for these are the premonitory symptoms which frequently lead to a precocious dementia. A short mental rest may restore him. It is best, if possible, to interest him in manual work. Let him work with his hands and put aside books. Farm work is ideal in such cases under proper supervision. At times, the agricultural and mechanical courses which are now being given in many colleges are well worth while in such cases. If the mental rest does not restore the child completely, it is a great mistake to push him through school or college. His family should be satisfied for him to become a wage earner with his hands. Many are not fitted for higher education and there is always a place for skilled manual labor. It is an immensely poor investment to gain a diploma at the cost of a wrecked mental or physical organization. From my observation of dementia praecox, I believe that many have been ruined by pushing through school and college who could possibly have been saved had the early

symptoms of a mental breakdown been recognized and had these warnings been heeded.

Puberty is the crucial time in the life of the child and this is often the time when many defects develop. At this time the child becomes a new being and every fibre of this new being pulsates with life and vigor. He does not understand his new sensations and hardly knows how to adapt himself to the new world which has now opened up to him. Parental restraints are set aside. Self-consciousness and self-criticism are marked. The youth is moody, introspective and broods. "Anxiety as to right exhausts the energy that should go into action. Trifles are augmented to mountains or debate with one's self as to what is right is carried so far as to paralyze action." Such an instability occurring as it does coincidentally with the arduous requirements of school life is too much for many children, and frequently the combined demands on the physical and mental strength of this time cause a mental breakdown. The normal child is able to weather the storm unaided—the mentally unstable, unless a helping hand is extended, succumb, and either spend their days in an insane hospital or are able to take only a small part in life's work. The opportunity of the physician is especially great at this period. The sexual question should be robbed of its mystery, thus preventing the vague fears and surmises which have pestered the soul of many a boy and girl, and, at times, have been their undoing.

In conclusion, then, children should, first of all, be made as nearly bodily perfect as possible, but the guiding and controlling of that body should not be neglected if we are to have "fine human beings." In every way possible self-reliance and self-control should be taught and, above all, children should be taught to do things rather than to think of doing them. It is never wise to get into the habit of avoiding difficulties, but it is always best to meet everything that comes up in life with decisive action. The habit of decisive action can

nowhere be better obtained than on the playground where the boy has to think and act quickly. For this reason, if no other, the play instinct should be cultivated. Wise municipalities are beginning to recognize as never before the value of playgrounds and this is a very hopeful sign for the youth of the future.

The child has been neglected in this age of commercialism, when every thought is bent towards the accumula-

tion of money. Herbert Spencer has well expressed the condition when he says, "The raising of a first-rate bullock is an occupation on which men of education willingly devote much time, inquiry and thought—the bringing up of fine human beings is an occupation tacitly voted unworthy of their attention." This is a short-sighted policy, for, "if regeneration is ever to lift us to a higher plane, the adolescent nîsus will be its main spring."

THE FAMILY PHYSICIAN, THE HOME, AND CHILD WELFARE*

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Some one has said: "There is nothing in all the world so important as children, nothing so interesting. If ever you wish to go in for philanthropy, if ever you wish to be of real use in the world, do something for children. If the great army of philanthropists ever exterminate sin and pestilence, ever work out our race salvation, it will be because a little child has led them."

"Child Welfare" per se, as a subject, is not new. "Child Welfare" to the physician means pre-natal or maternity care and infant feeding stations, "Child Welfare" to the lay audience means child labor and compulsory education laws, orphanages, detention homes, juvenile courts and reformatories.

But "Child Welfare" as related to the home is a brand new phase of child welfare work. And, still, one would naturally think that the home is the logical place for it to have originated. Perhaps it is a case of being too close to a thing to see it. But whatever the cause, it remains a fact that little has been accomplished along this line. It is true that, through mothers' clubs, parent-teacher associations, child study

groups and similar organizations, something is being done; but as compared with the bigness of the problem they have hardly scratched the surface. The trouble is that the problem is not primarily one to be solved by organizations. It can only be solved through the home. Neither the city nor the state has reached the point where it can enter the home and enforce dietetic and hygienic laws.

This enforcement must come from within, not from without. If this be true, then some one must initiate this enforcement in the home. The one great factor, the factor with the greatest potentiality for results, has not been utilized. It is the family physician. So long as child welfare as related to the home, inevitably revolves around the child's physical and mental health, *we shall never get anywhere until the family physician recognizes his responsibility and meets it.*

When the doctor decides he will no longer leave it to the poorly trained, but well meaning, lay organizations to inform the home on child health matters, but will assume the role of health adviser himself,—a role rightfully his;—then and not until then, will child welfare work, as related to the home, begin to bear fruit. And remember that

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the lay organizations usurped the doctor's authority only when he showed no disposition to exercise it himself.

So long as the family physician is interested only in the acutely ill child and shows plainly that he has not time to discuss with mother the problems of the delicate, nervous or malnourished brother or sister just so long will child welfare in the home cry out in vain.

The doctor may say in his defense that he is seldom consulted about the child, however delicate he may be, unless he is sick in bed. This may be true, but do you know why he is not consulted? I will tell you. It is for one of three reasons:

First; the mother is ignorant and thinks that so long as the child is not in bed he needs no medical attention.

Second; the mother is intelligent, but the doctor is in too big a hurry to talk about health matters; he only has time to talk about illness and disease.

Third; the mother is intelligent, but when she consulted the doctor before about her thin, delicate child, the doctor asked a few questions, pulled out his pad, wrote a prescription for what he called "a tonic" and out he went. Though the child took the tonic faithfully the mother lost faith in the doctor. Could he expect an intelligent mother to consult him a second time!

I say to you, gentlemen, it is just this kind of unscientific practice on the part of the regular profession that has driven the people to the homeopath, osteopath, christian science healer and the chiropractor, not to mention the apostles of Abrams.

In this discussion of child welfare I shall not include the period of infancy. This period of child-life has already received considerable attention. In fact, you might say we have a scientifically standardized program for the care of the infant. But when it comes to the care of the older child, the child of pre-school age and school age, we have no program, standardized or otherwise. Nor will time permit me to consider all the different phases of child welfare as related to the older child. I

shall simply call your attention to two common welfare conditions found in childhood. They are familiar to every one of you.

For the sake of convenience, and with no attempt at precise diagnoses, we will call one, "nervousness" and the other "malnutrition."

Some of you may say, why the nervous child and the malnourished child are one and the same. You give us a distinction without a difference. I grant you that the two conditions, "nervousness" and "malnutrition" are often found in the same child, and at times you can say which is *cause*, and which is *effect*. Nevertheless, malnutrition and nervousness occur independently sufficiently often to be considered independently.

If you have ever done general practice and worn that honorable, but fast disappearing title, "family physician," you will appreciate the situation I am about to describe.

The doctor has been called to see a patient in the home and just as he is leaving the house, mother says: "Doctor, I wish you'd give me something for Mary's 'nervousness', she is cross and irritable in the day and is very restless at night," or "Doctor, I am worried about Johnnie. He is pale and thin, has no appetite and is always tired. I think he needs a tonic or something to build him up." Now what does the doctor do? He asks a few questions, pulls out his pad and writes, perhaps, a "bromide" prescription for Mary and a so-called "tonic" prescription for Johnnie.

Now what should the busy doctor have done? He should have said: "Mother, there is a *cause* for Mary's nervousness, but I don't know what it is. Nervousness in children is a serious matter and as it has a tendency to grow worse and worse it should be treated promptly. If you will bring her to my office tomorrow morning at 10 o'clock I'll make a careful examination and then I'll know what to do for her." The same answer would have been equally appropriate in the case of the malnour-

ished child who received that wonderful panacea—"a tonic."

It will probably prove of interest if we review the possible causative factors in these two conditions, taking the "nervous" child first.

Perhaps it is a case of heredity or malnutrition, or over-stimulation in school, or friction in the home, or eye strain, or toxemia, as in diseased tonsils, decayed teeth or other foci of infection; or last, but by no means least, unrecognized feeble-mindedness, that is responsible for these nervous manifestations. Are bromides the proper treatment for these conditions? Does the child who inherited "nervousness" need bromides or does she need mental hygiene? Does the malnourished-nervous child need bromides or does she need rest and proper food? Does the child over-stimulated in school need bromides or does she need school pressure lifted? Can nervousness due to friction in the home be cured by bromides or by domestic adjustments? Can nervousness due to eye strain be cured by bromides or by glasses? Can toxic nervousness due to infected tonsils be cured by bromides or by tonsillectomy? Can nervousness due to decayed teeth be cured by bromides or by dental treatment? Is feeble-mindedness best treated by bromides or by mental guidance and training? If "bromides" is not the best treatment for these conditions, has the doctor met his obligation or discharged his duty to the child?

Now let us consider the possible causative factors in the case of the *malnourished* child. Briefly, I would mention the following: Hookworm, chronic malaria, diseased tonsils and adenoids, improper or insufficient food, lack of fresh air and sunshine, and, in the writer's opinion, the most important of all—overfatigue.

Will a "tonic" cure hookworm? Will a "tonic" cure malaria? Will a "tonic" cure diseased tonsils and adenoids? Is it a substitute for food? Can it take the place of fresh air and sunshine?, and can it overcome fatigue? If a "tonic" *cannot* do these things, has

the malnourished child had a square deal?; has his welfare been properly guarded?

As justification for this kind of practice, the doctor says the mother regarded the condition lightly, and would have objected to a free for an examination. In this wise he excuses himself. Apparently the blame has been shifted to the shoulders of the mother. But let us look a little deeper. Who is responsible for mother's attitude? I know and you know. We both know that, in the final analysis, *it is the doctor who determines the attitude of mother towards the health of her child.* When the doctor is concerned the mother is concerned.

Though I shall not pursue the case of the nervous child further, yet I do wish to discuss a little further malnutrition as related to food and excessive exercise. In doing this you will pardon me if I refer to the nutrition work we are now carrying on in the Richmond Public Schools.

Our plan is to weigh every child in the system and send to every mother who has a child 10 per cent or more under weight the following invitation:

RICHMOND PUBLIC SCHOOLS

R. E. Lee School

February 10, 1925.

My dear Mrs. Brown:

We have weighed and measured Ben.

We find that he is 15 per cent *underweight* and is suffering from malnutrition.

This condition can be overcome. Wouldn't you like to know how? If so, come to the school at 3 o'clock February 15 and hear Dr. Ennett, the Medical Director of Schools, tell the mothers how to cure this condition.

This meeting is *important* because the *health* of your child is *important*.

The talk will last thirty minutes.

Won't you spare this much time in the interest of the health of your child?

Yours very truly,

W. D. ELLIS, Principal.

At this meeting, at which the children are also present, we tell the mothers

that the three *chief* causes of malnutrition are,—first, physical defects, such as diseased tonsils and adenoids, decayed teeth, intestinal parasites, etc.; second, improper or insufficient food; and third, over-fatigue or excessive exercise.

The first cause, physical defects, is disposed of briefly by telling the mothers that every child suffering from malnutrition should be taken immediately to the family physician for examination and treatment.

The second cause, improper or insufficient food, is handled somewhat in this manner. The mothers are told that milk, butter, leafy vegetables and fruit, are growth foods and should be included in the child's diet every day. That the malnourished child should be *fed five times* a day and should *eat slowly*. That he will assimilate more food in five light meals than he will in three heavy ones. That if he dislikes certain articles of food it is because mother or father dislikes it. The remedy is plain. Mother and father must eat it. That if his appetite is poor for breakfast, it is probably because he has been allowed to sleep so late that when he comes to the table his mind is not on his breakfast but is on the school. He is wondering if he will be marked tardy and be kept in after school. The remedy is simple: earlier rising—not “a tonic.”

If he rushes home to dinner and must rush back to school or be late, here again, anxiety spoils the appetite. The remedy is lunch at school or a longer recess—not “a tonic.”

If his appetite is poor for supper it is probably because he is tired. Curtail his afternoon play and have him lie down a half an hour before supper. This is a better appetizer than a “tonic.”

Serve all food attractively and do not use the meal hour as a time for corrections and discipline.

The third cause (over fatigue or excessive exercise) is treated in this way. We explain in simple language, that a child's food is used up in four ways: in basal metabolism, in growth, in muscular activity and in excreta. “That a child's food intake may be regarded as

his physical income. Our of this certain overhead expenses must be met first. They are, the needs for basal metabolism, the needs for the normal necessary activity of life, and the loss in excreta. To repeat, the needs for basal metabolism, for the normal activity of life, and the loss in excreta are the three necessary overhead expenses which *must* be met first. What remains may be spent, i. e. used up in *excessive activity* or may be *saved*, i. e. *utilized in growth*. Both these he cannot do. Excessive activity is always at the expense of weight and growth *unless* the food intake is proportionately increased.” This explains why it is so difficult to put weight on the nervous, active, energetic child. It also explains why the farmer first pens the pigs he would fatten.

I tell them it is useless to try to put weight on the malnourished child who is spending the afternoon skating, jumping the rope, bicycle riding or taking dancing lessons; that 10 to 12 hours sleep at night and 1 hours rest every afternoon is necessary; that he must be weighed every week, the same day and hour and a record be kept.

To sum up briefly, most cases of malnutrition (except those due to physical defect or disease) will usually yield promptly to the following simple regime:

1. Five proper feedings daily;
2. Elimination of strenuous exercise;
3. One hour's rest every afternoon; and
4. Weekly weighing.

Weighing not only holds the child's interest as nothing else can, but it is talked about at home and helps to hold the interest of the whole family in the child's health. May I add here that every doctor's office should be equipped with a pair of scales, and nutrition work just can't be done without them.

Some mothers balk at the above regime because they still think a “tonic” can do the work. But a little time spent in a plain, earnest, frank talk will usually bring about an attitude of co-

operation. This talk should be in the presence of the child if he is over six years old, and in the presence of the father, also, where possible. I include father because his ignorance or lack of understanding and his consequent lack of sympathy oftentimes blocks mother's efforts. You will find that most parents, when they understand, are ready to do what is best for their children if the doctor shows an *interest*, is *definite* in his instructions and speaks as one *with authority*.

"Human life is motivated by two great fundamental instincts—that of self preservation, and preservation of the species. Both of these instincts focus upon the child, for on the one hand the child is a part of the parent self; on the other hand he is a new member of the species—the hope of the future. Thus the end and aim of life is the care of the child."

Discussion

Dr. Alvin Fleet Bagby, Richmond:

At the last medical society I attended we had the subject of eclampsia. Many ways of treating eclampsia were brought out, but not one word about preventing it; while in this discussion today it was all about preventing eclampsia, not treating it. The time will come, I hope, when the talk will be not about curing tuberculosis, but about prevention, and, as Dr. Ennett says, early in life. The larger part of tuberculosis is contracted in early life. We know insurance companies want thin old people and fat young people. If we can keep these young people fat we shall prevent tuberculosis and keep down nervousness in later life. Dr. Ennett has done wonderful work in Richmond along this nutritional line. My own boy last year, under his supervision, gained twelve pounds in open air class. One point he spoke of in passing was longer recesses. I believe that boy's gain last year was due to one hour's rest in the middle of the day. He had had more fresh air all his life than he did then, and had always had a hot dinner, but had not had that rest in the middle of

the day. Wouldn't it be better for children to go to school at eight-thirty, go home at eleven, get an hour's rest, a good dinner, and an hour's play in the sunshine, then go back to school at two o'clock and get out at five? I believe the child would do better work and would grow more.

Dr. J. M. Northington, Charlotte:

I think anyone will agree with what Dr. Ennett said about the necessity for careful examination and in condemnation of the practice of asking a few questions, taking out a pad and writing a prescription for a tonic, whatever that may be; also with his statement that in the vast majority of instances mothers will be found intelligent enough to appreciate a careful going into the details of the child's illness. A thing that frequently is very much overemphasized is the response to any line of treatment in any individual, and particularly in a child. Certainly the natural tendency is to get well, and that is more true in childhood than in later periods of life. I do not know whether it is through misinterpretation of the pediatrician's advice as to the amount of attention to pay to weight curves or misdirected zeal on the part of other people, that so much attention is paid them. I think I have seen only three children in the last year. Mothers will call me up and say the child is not the right weight for its age. What is the right weight for a certain age? Parents vary tremendously in weight for the same age, and why should we not expect children to vary a great deal in weight at the same age? Assuming that the average adult horse in Virginia and North Carolina weighs a thousand pounds, it certainly does not mean that a normal Percheron should weigh one thousand pounds, or that a Shetland pony will weigh one thousand pounds. Also, if the offspring of those varieties weigh the same at a certain age it is not evidence of normality but of abnormality. At least one recent textbook on pediatrics does not emphasize weight curves. A matter closely related to this

is the danger of baby shows. They have done some good, but also a great amount of harm, growing out of the anxiety of mothers whose children are and have been perfectly healthy, but who do not weigh as much as somebody's weight curve says they should weigh at that age.

Dr. James K. Hall, Westbrook Sanatorium, Richmond:

Not very long ago, when the family was at supper (we eat supper every night), the weather was very windy, and two or three times during the meal I heard somewhere about the front of the house a sound that was so weird that it made me uncomfortable. It evidently had a very much more pronouncedly uncomfortable effect on the three-year-old, the youngest in the home. There were two others, a little older. It disturbed the youngest child so much that he stopped eating and got down from the table. I went to the windows in the front of the house, and to the door, but heard nothing. When I came back to the table the sound recurred. I took the baby child by the hand, went out of the house, closed the front door, and fortunately, just as I got outside, the sound recurred again. I found that it was made by the metallic weather strip on the front door. I went out in the yard, got a blade of grass, put it between my two thumbs and blew against it, and made a sound, by vibrating the blade of grass, not unlike the sound made by the weather strip. I showed the child how the sound was made by the grass, and then took him to the door. Fortunately, as we got there, the sound recurred again. I showed him how the weather strip caused it, and stayed there until it recurred several times and until he got to understand it as well as a three-year-old child could. Then he went back and ate his supper. That sound continued until the children went to bed. I believe if I had not taken that means of explaining that,—I was about to say phenomenon, but that is too big a word to use in connection with a three-year-old child—that happening, that

fear would have stayed with him all through his life. Fear is a terrible thing—the most terrible thing in life. There is only one good fear in life; that is the fear of the Lord, which the Bible says is good and must be so. Now, most of us are materialistic; we incarnate God and the Devil too. If I ever see God I shall know exactly what He looks like, because I incarnate Him. One of the worst disturbances of the emotions is that thing we call fear. It not only affects the mind, the intellect, but I am satisfied it affects the function of every cell in the body. It affects our relation to God and the universe; it colors our notions about religion. The average person's religion, I suppose, is fear. It colors our politics and influences our votes. In a medical society it influences what we say, and makes us say what we do not believe, oftentimes. Now, I am trying to raise three boys, and if there is anything more difficult than being secretary and treasurer of a medical society it is that thing. I believe the men who are engaged in child health work should teach the parents the terribleness of fear, what a terrible thing it is in adult life, and how much more terrible in childhood. Teach parents to rear their children as nearly as possible free from fear, and teach them the importance of explaining a fearful thing to a child.

Dr. Charles O'H. Laughinghouse, Greenville, N. C.:

To my mind Dr. Ennett's paper, so far as the profession is concerned, has in it a connecting link between public health work and the general practitioner. North Carolina's Board of Health has, as Virginia's has had, the very arduous undertaking of pushing this question of human life during its period of school life before the people and before the profession. It would be a wonderful service could this paper be disseminated in some way so that it would get on the desk of every professional man in the three states. It is a fact that medical men who are surgeons, who are internists, and who are men engaged

in general work fail to take the time and patience that Dr. Hall took with his blade of grass, and the medical man has this thing to do. There is no place in which preventive medicine can have the effect upon the progress of this world as during the period where human life comes under the observation of medical men during the school age. I was very much impressed with this paper. I have heard the same idea put before audiences time after time, but I have never seen it put so clearly, so splendidly, and so simply, and I should be very glad indeed if Dr. Ennett would do me the kindness to mail me a copy of his paper right away.

Dr. Ennett, closing the discussion:

I have only a word to say, and that is to reply to my good friend Dr. Northington, who I think, if he were in school,

would get one of our notices about malnutrition. It is true that we have no standard weight for any particular child. That is perfectly true, but the weights by which we are governed and which we call standard are made up by taking thousands and thousands of what are supposed to be well children of mixed population and striking an average for their age and height. So far as we know, weight is the best single index to a child's nutrition. I should like to call Dr. Northington's attention to another fact—that is, that we do not send notices for three per cent. or five per cent. underweight, but for ten per cent. In other words, the child has gotten to the stage where he is under par. We might just as well say we do not know what normal blood pressure is. We might say 135, but if it goes up to 165 or 170 are we going to ignore it?

DIPHTHERIA, ITS CONTROL AND PREVENTION*

A. C. BULLA, M.D., Health Officer, Wake County, North Carolina, Raleigh

I have not written this paper for the purpose of multiplying words and pages, to consume a certain amount of allotted time in this program, and to force you, with your permission, to listen to it. Time is too important, particularly since you are away from your daily labors and monotonous routine and in a mood to enjoy yourselves for a few days. It would not be fair and just and I shall not burden you with it.

I have nothing new of my own to impart to you. I have my ideas about diphtheria, its control and prevention. An opportunity has been given to me to express them—I have done my best.

My ideas and my opinions may run counter to those of yours. If they do not this meeting cannot be justified and should not have any place in history. Therefore, you and I expect to go away from it richer in knowledge, uplifted in spirit, with a renewed vigor and vim

and with a determination to strengthen the battle front.

Diphtheria has come down to us from antiquity under many names, such as "Egyptian Sore Throat," "Putrid Sore Throat," "Gangrenous Ulcer," and the like, until about the first part of the nineteenth century when it was given its present name, Diphtheria. It is frequently called membranous croup by physicians and laity alike. There is proof which justifies the belief that this disease existed in Greece long before the time of Hippocrates. It was recognized during the dark ages and no doubt contributed to the high death rate of that period. It probably found its way into this country through the Colonies in the early part of the seventeenth century.

Its specific cause is well known to all of us and was discovered by Klebs in 1883, and one year later Loeffler worked out its cultural characteristics and carried on the work of Klebs; therefore, it is known as the Klebs-Loeffler bacillus.

*Read before the North Carolina Public Health Association, Pinehurst, April 27, 1925.

It is more or less prevalent throughout the whole civilized world. With the rapid development of modern transportation facilities, which make it possible to travel around the whole world and back again in the course of a few hours, we would not expect anything else among susceptible people. However it seems to be more prevalent in the temperate, climat.

It has a wide margin of racial preferences, but this does not concern us here in North Carolina, where our native born, the white and the black, constitute about 99.5 per cent of its population, the white being more susceptible than the black.

When we begin to trace this disease from its antiquity down to the present time we find that the morning star rose with the fruitful discoveries of Klebs and Loeffler, who found and worked out the life history of the bacillus, and illuminated the world with hope and cheer by announcing the specific cause of the disease. This light, which illuminated the world, has never been dimmed, but has grown brighter and brighter from year to year, until today it is one of the brightest lights of modern medicine and its discoveries take their places along with no lesser lights in the medical world than those of Jenner, Lister, Pasteur, Koch and Gorgas.

No more diphtheria is a goal yet to be achieved, notwithstanding the fact that we know, and have known, its specific cause for forty years and more. Certain control measures have been in use since this time, but the last decade has given to us many additional measures, which in the light of our present-day knowledge, make it possible in counties with well organized health departments to apply these measures to the extent that diphtheria will not only be controlled but prevented. It can be done.

One of the fundamental principles of public health work today is to teach the greater mass of our citizenship the practical application of sanitation and hygiene, of vaccines and sera, the application of measures, tried and proved, to cure, control and prevent diseases. We

know it is better to guard well the precipice at the top than to wait at the bottom with an ambulance. We are rapidly passing from an era of curing diseases to an era of preventing them.

Probably no other disease known to us today presents greater opportunities and possibilities to demonstrate what can be done to control and prevent than the one under discussion. The death rate in 1890 was 97.8 per 100,000 population in the registration area of the United States. This probably represents the normal rate before the day of antitoxin which was placed in the hands of the medical profession in 1895. Five years later, with only a few laboratories manufacturing and distributing high priced antitoxin, the death rate had been reduced one-half. Since then the reduction has been slow but gradual, until today the rate in North Carolina is 12 per 100,000 population. This great reduction has been brought about largely by the use of antitoxin as a cure and as a prophylactic.

Since 1913 the Schick test and toxin-antitoxin mixture have been in use. But not until 1918 have they been widely and successfully used. They are the most valuable methods we have today and they offer the greatest possibilities of control and prevention that we have at our command.

Methods now in use to control and prevent diphtheria are:

- 1—Early diagnosis.
- 2—Quarantine and isolation.
- 3—Swabbing and culturing contacts and convalescent cases.
- 4—Antitoxin.
- 5—Toxin-antitoxin mixture or diphtheria vaccine.
- 6—The Schick test.

I shall discuss these methods briefly. To start with, we must first keep ever before us the known fact that all diphtheria comes from a previous clinical case recognized or unrecognized, or from a carrier.

An early diagnosis and the opportunity of barring the patient from other members of the family until it is determined what the sickness is, are wonder-

fully effective means in the control of the disease. This fact should be emphasized again and again because it will not only reduce the morbidity rate but materially reduce the mortality rate.

Quarantine and isolation of diphtheria cases and contacts have wide variations of usefulness in controlling and preventing this disease. We must admit its effectiveness depends, to a large extent, upon the degree to which it is backed up by public opinion and the public's conscience, rather than by statute. Back of public opinion and the public's conscience lie the basic principles of these methods of control and prevention. We know that a small percentage of convalescent cases and contacts remain virulent carriers of this disease. Therefore, to release contacts at the expiration of the incubation period of seven days, and the convalescent cases at the expiration of the quarantine period of twenty-one days, among susceptible people, without knowing whether they are carriers of virulent diphtheria germs, are ineffective means of controlling this disease. Swabbing and culturing of convalescent cases to be released should be encouraged and is an effective means of control. Two negative cultures taken from nose and throat at two to three days intervals should be required of all convalescent cases before being released. If two or more cases occur among contacts, within one week, all contacts should be swabbed and cultured.

The giving of the prophylactic dose of antitoxin to all contacts, young and old alike, as a routine, should be discouraged. Children in homes, under six years of age, who have been in close contact with a dangerous case, provided, they have not had three to five injections of toxin-antitoxin mixture or a negative Schick, should have the prophylactic immunizing dose of 500 to 1,000 units of antitoxin. There should be a clear indication for it before it is administered. I think in children over six years of age and in grown people we should withhold the prophylactic dose and apply other measures, which

include close observation of contacts, culturing, toxin-antitoxin mixture, and the Schick test, all of which are important in the control and prevention of diphtheria.

Three to five doses of toxin-antitoxin mixture should be given to all children from six months to six years of age without applying the Schick test. As the majority of this age group are susceptible it is waste of time to give it. Children over six years of age and grown people should be Schicked to determine their immunity or susceptibility before the administration of the toxin-antitoxin mixture.

Dr. Park of the New York City Health Department, says, "The Schick reaction is a convenient and reliable clinical test, by which the antitoxic immunity of an individual to diphtheria can be determined."

To give the Schick test is a simple procedure and can be done very rapidly. The test is made by injecting 0.2 c.c. of diphtheria toxin intracutaneously on the flexor surface of the right forearm. The control is made at the same time by injecting 0.2 c.c. of heated toxin on the left forearm. The results of the test should be read on the fourth to eighth day inclusive. The reactions which may follow this injection are: positive, negative, pseudo-negative and positive-combined. The positive and positive-combined represent lack of antitoxin in an individual, while the negative and pseudo-negative represent antitoxin in the individual. The local reactions vary in intensity from a point plus minus to a very deep two plus. The application of the Schick test to children over six years of age and in grown people is justifiable before giving the toxin-antitoxin mixture. Of 3,000 school children Schicked in Wake county, including the city of Raleigh, I find only 20 per cent who give a positive reaction; 700 of the 3,000 were colored children with only 13 per cent positive.

The health authorities in the town of Auburn, New York, of 36,000 population, in the last two years, have Schicked about 35 per cent of the school

population and immunized those found to be susceptible. They have also immunized 700 pre-school age children. During the last school year there were no cases of diphtheria among the school children who had been immunized, and seven cases and no deaths among children not immunized. If we can control and prevent the cases among school children and thereby reduce the numbers of convalescent carriers and contact carriers, we will have reduced to a minimum, in my estimation, the source of most of our diphtheria among pre-school age children.

To Summarize

1. Early diagnosis will reduce the morbidity and mortality rate.
2. Quarantine and isolation unaided by public opinion are ineffective means of control and prevention.
3. Two negative cultures taken from nose and throat of all convalescent cas-

es from two to three days interval should be required of all cases before released.

4. The prophylactic dose of antitoxin should be given only when there is a clear indication for so doing, and not as a routine to all contacts.

5. Children from six months to six years of age should be given three to five doses of toxin-antitoxin mixture without being Schicked.

6. Children over six years of age and grown people should be Schicked before taking the toxin-antitoxin mixture. Our comparatively low percentage of positives justifies this.

7. By immunizing the school population, and thereby eliminating cases, convalescent carriers and contact carriers, greater protection will be given pre-school age children, who, because of no fault of their own, become the victims of this disease.

APPENDICITIS*

H. L. BROCKMANN, M.D., High Point

Although a classic paper on appendicitis was written as long as a hundred years ago by Louyer-Villermay and much progress has been made in the diagnosis and treatment of this disease, there are yet many deaths caused by it. In view of this fact continued consideration of the subject is well in order.

The first case of localized appendicitis on record was operated on and reported by Mestivier in 1759, and the pathological appearance clearly described in the autopsy record. It is to be noted that in spite of this and the fact that Melier described the symptoms and pathology of appendicitis in 1827 and stated that "If it were possible to establish with certainty the diagnosis of this affection, we could see the possibility of curing the patient by operation," more than fifty years passed before surgical

treatment of the condition was accepted and employed. Today most deaths occurring from appendicitis result from failure to recognize the disease early, and unwillingness or failure on the part of the patient or the family or the physician to appreciate the danger of delay in applying the proper treatment; namely, prompt removal of the offending member.

Anatomy

The wide variance in the form of the appendix accounts in great part for many different clinical aspects of appendicitis. In general the structure is a long and narrow diverticulum from the posterior and internal aspect of the cecum, (taking origin in about 94 per cent of all cases at a point one-fourth to one-half inch posterior and lateral to the ileocecal valve or junction). In its natural state the serous or perito-

*Read before the Eighth District Medical Society, June, 1925.

neal covering and mucus lining are well developed. The muscle layer is poorly developed. Under the mucus layer there is an abundance of lymphoid tissue, a fact which has caused the term abdominal tonsil to be applied to the appendix. Through many defects in the poorly developed muscle layer, this lymphoid tissue has many communications with the subperitoneal tissues, allowing the poisonous products of inflammation to be readily absorbed into the system at large. The blood supply on the other hand is so poor that gangrene results on rather slight provocation. In length the appendix varies normally from one-third of an inch to nine and one-third inches, and the diameter is one-eighth to three-eighths of an inch. It is recorded that in infancy the length is absolutely as great as in adult life. Its free portion usually lies in posterior internal relation to the cecum, but in many cases it is found elsewhere: extraperitoneally behind the cecum and ascending colon, extending upward in the midline so that its tip is adhered to the gall bladder, or up to the right near the hepatic flexure posteriorly. It is often in the pelvis, and may adhere to the urinary bladder, fallopian tube or ovary, sigmoid or rectum, and it at times lies in a hernial sac.

Occurrence

Appendicitis is much more common in young and middle-aged people than in children or the aged. It is rare in infants and when it does occur it is easy to make the erroneous diagnosis of intussusception. In warmer climates and in summer it is more frequently met with, but like other diseases of the digestive system, it is not nearly so common among negroes.

Etiology, Types and Symptoms

The most frequent microbe playing part in appendicitis is *B. coli communis*, although the leading germ in many instances is a pus forming staphylococcus or a streptococcus. It is the presence of germ life in the obstructed or diseased appendix that makes the disease dangerous, and the types of bacteria

that happen to be present largely determine the outcome.

Pain originating in the appendix and simulating appendicitis can be caused by temporary twisting or pinching without inflammation. In such cases the pain is momentary and further evidence of disease is unlikely.

Symptoms arising from torsion or bending of the appendix in some unfavorable position which causes a partial obstruction and probable interference with its blood supply are likely to be the well recognized classical symptoms of appendicitis. Most prominent among these symptoms is acute pain at first usually about the umbilicus or spread over the abdomen and later settling at McBurney's point. There is rigidity of the right rectus muscle and nausea is likely to follow the pain, and if the local pathology progresses, moderate fever, 99 to 101 or 102, and vomiting. The right and sometimes both thighs are flexed to reduce the tension on the abdominal muscles, and breathing is often shallow and thoracic. There is almost always tenderness over McBurney's point. Occasionally this is greatest elsewhere, as at the umbilicus or in the epigastrium. The same symptoms are brought on in cases caused by cecal stasis and flatulence, in which there is prolonged accumulation of fecal material in the vermiform diverticulum. If operation be performed early these patients are fortunate in having the appendix removed without difficulty or danger. Examination of the removed appendix will reveal little or no ulceration of the mucosa, but the lumen is likely to be struttled with liquid or semisolid fecal material, mucus, or muco-pus. The wall of the appendix is generally somewhat thickened and the blood vessels congested. Such an appendix, if not removed, may become ulcerated and perforate or form an abscess. Sometimes the contents of the appendix are discharged into the colon and complete or partial resolution results. There may be formation of fibrous tissue and adhesions. When an acute attack with ulcerations subsides, cicatricial contrac-

tions occur and partially, or completely obliterate the lumen. From this condition arises chronic appendicitis with perhaps subsequent acute attacks.

Fecal concretions and other inspissated fecal material, as well as an occasional foreign body or a dense adhesive band, are likely to cause a complete and permanent, rather than partial and temporary, obstruction to the appendiceal lumen. The symptoms are not far different from those above given and yet rupture or perforation, gangrene, and abscess, are likely results which may occur with very little delay. If the appendix lies behind the cecum an abscess may develop there. If it is free, but perforation takes place gradually, omental and intestinal adhesions may so form about the lesion as to localize the peritonitis. This is especially true when the colon bacillus is the operating agent. If the latter happens to be a streptococcus general peritonitis is practically inevitable. It is in these forms of appendicitis that the greatest variety of pathology is found. The appendix may give the appearance of a red sausage or wiener. It may be dark olive green from gangrene, or present areas of gangrene. It may be surrounded with liquid pus or plastered over with a thick butter-like purulent exudate. In its lumen, or, if perforated, frequently on the outside, may be found fecal concretions, often in the form of dense rounded masses about the size of a pea. The entire appendix occasionally sloughs off.

The symptoms in these cases are progressive. Rigidity of the abdominal wall becomes more pronounced as a rule. There is often a foul odor to the breath. With perforation however there is frequently a cessation of pain and a drop in the temperature. There is a danger in this being mistaken for spontaneous cure or relief from the attack. The pulse is apt to be rapid (about 100) in such a case and there is likely to be a leukocytosis with a high percentage of neutrophils. An accurate blood count is of much value in determining these conditions. In ab-

cess cases a mass is not always discoverable. At times it can be distinguished by rectum or vagina. It is inadvisable to palpate too heavily, especially after an anesthetic has been given, for fear of doing damage.

Abdominal distention, general tenderness, rapid pulse, persistent vomiting and hiccups are signs of general peritonitis which may develop at any time.

Diagnosis

The diagnosis of appendicitis is not nearly always easy. Conditions with which it is confused are acute intestinal obstruction, ovarian cyst, salpingitis, pneumonia, typhoid, gall bladder disease, gastric or duodenal ulcer, and renal colic.

Treatment

Regardless of the various types of pathology presented, inflammation of the appendix is one disease which merely varies in degree. When it comes to the matter of treatment, to wait for spontaneous resolution and cure in appendicitis may at any time result disastrously. Such a procedure is always dangerous. The disease is very often but not quite always a matter of obstruction to the lumen of the appendix and a conversion of it into a closed cavity of infected matter. Thus it can be readily seen that some outlet for this becomes necessary,—that the condition is seldom likely to subside without doing serious damage.

Each case must be treated according to its own particular characteristics. In the great majority of cases of acute appendicitis prompt and often immediate operation is indicated. If performed within two or three days from the onset of symptoms operation usually forestalls rupture or abscess, but no certain length of time is required for such complications to intervene. If the surgeon is convinced that perforation has taken place or a local abscess has formed, or general peritonitis is present and the symptoms are grave, it is wise to delay the operation until reaction takes place. Such patients should be placed

in the Fowler position with hot fomentations applied to the abdomen, and nothing given by mouth excepting warm water.

After about a day, if no improvement takes place, operation should be performed. A numerical and differential white blood count repeated at intervals of about four hours is helpful in determining the patient's reaction. Improvement takes place in by far the majority of instances and operation is then a much safer undertaking. This expectant form of treatment is not so suitable for infants and small children because they do not react readily under such circumstances.

Drainage is of prime importance in cases with walled off appendiceal abscess. Recovery is much hastened by removal of the appendix in abscess cases, but if this entails much breaking up of adhesions and spreading of pus, it is preferable to simply drain and if necessary remove the appendix later.

Drainage is indicated whenever pus is present even in small amount; also in cases of perforation. The presence of gangrene alone does not call for drainage unless there is pronounced toxemia or likelihood of hemorrhage. In young children it is more important to drain than it is in adults.

SURGICAL INDICATIONS FOR BLOOD TRANSFUSIONS

CHARLES CARROLL SMITH, M.D., F.A.C.S., Norfolk

The introduction of fresh, living, whole blood to a patient from another individual may save a life, make a seemingly inoperable surgical risk operable, or at least greatly benefit the immediate condition and prolong life. Transfusions are indicated from a surgical standpoint whenever all or a part of the elements of the blood tissue are needed and cannot be reasonably expected to be supplied by the hematopoietic organs of the individual. Such a condition may arise from a variety of causes that for convenience can be grouped as follows:

1. Loss of blood, either frank hemorrhage or long continued slow oozing.
2. Loss or lack of normal coagulability.
3. Changes in blood elements due to the ravages of infection or toxemia.
4. Cachexia and general weakness, the result of malignancy or constitutional disorders.

Hemorrhage of a severe nature is an urgent and specific indication for blood transfusion and it is in this type of case that its value as a therapeutic aid can be highly rated; it is a logical thing to do and the results are convincing. The intravenous or subcutaneous administra-

tion of normal salt solution, gum acacia, and various modifications of the same nature as a means of supplying additional fluids when sufficient amounts cannot be ingested by other means have long been accepted as means of maintaining body fluids depleted by hemorrhage. These measures have their place and are indeed of value but though they do good their beneficent value is fleeting and in this respect blood transfusion differs greatly. It is a transfer of living tissue which certainly for quite a while continues to function according to its constituents; experimental studies by Ashley have shown that the transfused corpuscle lives for thirty days or more. We have only to remember that severe hemorrhage is closely akin to asphyxia to realize the great need of properly oxygenated blood to the exsanguinated individual.

However hemorrhage might well be considered from its other angles at this time in order that the urgently indicated transfusion may be intelligently used. In ordinary operative procedure the loss of blood is not often alarming, hence our good results from merely maintaining the body fluids with water

or saline. It has been accurately estimated that in a radical breast amputation done with reasonable care, the patient rarely loses more than 500 to 700 c.c. of blood and usually not that much, and as we repeatedly see a donor give 500 to 750 c.c. without ill effect it seems reasonable to suppose that a loss of 800 to 1,000 c.c. has to be suffered before the condition becomes dangerous. Now in case of severe hemorrhage it is advisable to give large quantities of blood, 750 to 1,000 c.c. There is practically no danger of acute dilatation of the heart; that amount of blood has been lost, and the reaction is more apt to be severe in subsequent transfusions. However it is well to bear in mind that nature combats hemorrhage in two ways, by lowering blood pressure and by favoring formation of a clot in the end of the bleeding vessel. Thus it seems well to caution against too large quantity of blood in those cases in which the bleeding point is not under control and advise just enough transfusion to make feasible accurate surgical procedure to stop hemorrhage at its source, whether it be gastric ulcer, a severed artery or a ruptured ectopic. When the vessel is tied or the bleeding otherwise controlled the additional blood can be given as the wound is being closed or while your patient is still on the table.

In case of persistent oozing of blood in small amounts from intestinal lesions, epistaxis, hemorrhoids, various hematurias, or in fact from any part of the body a grave secondary anemia finally ensues and at times when the lesion is obscure and bleeding goes unnoticed it may quite readily be confused with pernicious anemia. In such cases marked improvement follows a series of transfusions at intervals of 6 to 10 days and the blood picture again approaches normal. It is almost needless to say that the improvement is maintained only in case the cause of the bleeding is ascertained and corrective measures instituted.

The two outstanding causes of delayed coagulability are perhaps hemophilia and cholemia. In the first of these it

seems at times as though the blood has no tendency to clot and the patient may become almost exsanguinated before anything other than simple first aid measures are used. It seems that blood transfusion in the severe cases is more desirable than blood serum alone in that in addition to enough prothrombin to produce clotting you will at the same time replace the lost blood with all the elements of blood tissue. In cholemia it is a valuable and reliable aid either as a pre-operative precaution or in checking the alarming post-operative oozing of a jaundiced patient who has suffered from a tedious operation for removal of common duct stone. The need for transfusion in the jaundiced patient has become less frequent since the introduction of intravenous calcium chloride medication as a pre-operative measure according to Watters of the Mayo Clinic, 10 c.c. of 5 per cent solution daily for three consecutive days.

Though sponsored by reputable men and by them given credit for great good in many severe types of septicemia following peritonitis and other infection, blood transfusion seems to me to be an uncertain quantity in this field. Further advances in rapidly immunizing donors to the infection at fault may lead to great success in the use of immunized blood, but at present this procedure is too slow and too uncertain to be of value. In cases of long continued low grade infection or in toxemias where there have been inroads on the blood elements it seems reasonable to suppose that transfusions would tend to restore the normal blood picture, raise the body resistance, and perhaps enable the forces of defense, marshalled by the body in its fight, to hold until effective offensive factors can be brought into play. Such cases as those so frequently seen among the wounded in the World War where the patient was pale, inert, unable to eat, nervous and day by day gradually fading out from wounds that would not only fail to heal but apparently become more and more sluggish and dirty until septicemia was followed by death. These cases

were often converted into more hopeful pictures and often saved for curative surgery by a series of timely transfusions. As a therapeutic agent in combatting an acute, overwhelming infection however transfusion at present is of no value.

Banti's disease, hemolytic jaundice and pernicious anemia are conditions for which surgery offers much through transfusions in conjunction with splenectomy. In such cases when the red count is low or where there have been repeated and persistent hemorrhage, blood transfusion materially increases the operable cases and lowers the surgical risk. Griffin and Szlapka have reported upon the results of splenectomy in some fifty cases of pernicious anemia from the Mayo Clinic. They believe the operation prolonged life in one-fifth of the cases. Minot and Lee have the impression that cases with large spleens derive more benefit from splenectomy than those in which the spleen cannot be palpated.

Transfusion is one of the measures that naturally come to mind as we assemble our armamentarium for combatting surgical shock; it is both a prophylactic agent and a remedial one. In case of cachexia from malignancy or asthenia from some long continued pathological process a transfusion or several transfusions, properly intervalled, of from 500 to 750 c.c. of wholesome blood often enables us to proceed with a long and serious operation that at first seem-

ed almost equivalent to manslaughter. On the other hand at the end of a tedious, shocking operative procedure a pint of blood given while closing the incision or soon after the operation will often transpose a surgical tragedy into a worthy achievement.

Such it seems are the main surgical conditions in which blood transfusion offers its most encouraging results. A valuable adjunct when properly applied, a procedure which has been rather reluctantly accepted in spite of its efficiency and ready adaptibility to more frequent use.

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FURTHER OBSERVATION ON KIDNEY AND BLADDER STONES WITH SPECIAL REFERENCE TO RECURRENCE

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Recent investigations have shown that recurrence of urinary calculi is very frequent. These investigations have also shown that operation for removal of calculi without subsequent treatment and when possible the removal of the cause invites recurrence.

Cabot and Crabtree² in 1915 reported

that the follow-up record on eighty-seven cases of stone in the kidney and ureter showed that 38 had recurrence.

Braash³ in 1917 reported that in a series 88 patients who were operated on for nephrolithiasis 13 or 14.7 percent had recurrence, 15 gave a history of probable recurrence and 18 had passed

stones subsequent to operation.

Barney⁴ was able to obtain data on thirty-five of a series of seventy cases of nephrotomy done over a period of 25 years. Out of 16 who had roentgenographic examination fourteen showed the presence of stone in one or both sides, giving a percentage of 40 for those whose definite results were known.

Lau⁵ reports that in general surgical service at the New York hospital from January 1, 1914, to January 1, 1924, there were admitted 304 cases of urinary calculi, classified as follows: kidney, 205; ureter, 73; and bladder, 26. Eighty-three operations were done for nephrolithiasis and twenty-seven operations for stone in the ureter. Among these patients 3 per cent passed stones before admission and 3 per cent had operation for stone prior to admission. Of this series 22 patients or eight per cent were operated on for stone in the kidney or ureter, who subsequently demonstrated recurrence.

Hunner⁶ in February, 1925, reported 3 recurrences in the same kidney after the opposite kidney had been removed over a period of little more than a year.

The following abstracted case history will illustrate some of the attempted points of this paper.

G. M. M. Married man, age 44, who came to the hospital April 7, 1924. Had had gastro-enterostomy for duodenal ulcer ten years before and the appendix was removed at the same time. For several years he had frequent attacks of sore throat, tonsils removed 6 years ago. All teeth had been extracted for pyorrhea.

Ten days before admission he began to have slight pain in the left lumbar region which gradually became worse, accompanied by macroscopic blood in the urine. The pain was intermittent and suddenly became very severe two days ago requiring opiate.

April 7th: A pyelogram of the left kidney disclosed a small oval stone in the left kidney pelvis overcapped by sodium bromide solution. Also a stricture of the ureter about three inches from the kidney. He was marked pto-

sis of both kidneys. The urine contained many leucocytes and few erythrocytes. Culture showed abundant colon bacilli. Phthalein rt. 35, left 15.



Fig. No. 1. Pyelogram of left kidney April 7, 1924, show a small oval stone in the kidney pelvis and a ureteral stricture just below pelvis.

April 9th: Pyelotomy was performed on the left. The kidney pelvis was found to be dilated and a small soft stone was removed from the pelvis. The pelvis and ureter were irrigated with saline solution, the pelvis was closed with No. 1 chromic catgut and the wound drained with two cigarette drains. The stone was composed of ammonium and calcium phosphate.

April 16th: The left ureter was dilated to size 11 French and both kidney pelvis irrigated with 1 per cent silver nitrate solution.

April 19th: The patient left against advice but promised to return for further treatment. He returned twice for kidney lavage and ureteral dilatation.

November 26th: The patient was readmitted complaining of frequent and painful urination and dribbling. These symptoms began four months before and gradually became worse. Roengen-

ray examination showed a large spherical stone in the urinary bladder. The urine showed abundance of pus and the culture showed the presence of staphylococcus aureus and colon bacillus. Two hour functional test showed 45 per cent elimination.



Fig. No. 2. November 26, 1924, large spherical stone in the urinary bladder.

November 27th: Under local anesthesia supra-pubic cystotomy was performed. The bladder was tightly contracted around a large spherical stone which was broken in removing. The mucosa resembled a pyogenic membrane. The stone which weighed three ounces was very soft and composed of ammonium and magnesium phosphate with a small amount of calcium phosphate. Daily bladder irrigations were carried out.

December 24th: The patient left the hospital against advice but promised to return after the holidays. He returned occasionally for bladder irrigations and dressing of the suprapubic wound.

January 16, 1925: The patient was readmitted complaining of severe colicky pain in the rt. lumbar region, high fever and nausea. This time his con-

dition was too serious for immediate examination. He was put to bed given forced liquid diet and morphia.



Fig. No. 3. January 19, 1925. Roentgen ray examination showing small oblong stone in the right kidney pelvis. Left kidney negative.

January 19th: X-ray disclosed a large oval stone in the right renal pelvis. The ureters, the left kidney and the bladder were negative for stone.

January 28th: Right pyelotomy was performed, a soft stone (2.5 by 4 cm) was found in the renal pelvis. The kidney pelvis and ureter were irrigated with saline solution and the ureter was dilated to size 16 French. The wound was closed without drainage. The stone was composed of ammonium and calcium phosphate.

February 9th: The wound was healed. Both kidney pelvises were lavaged with 1 per cent mercurochrome solution.

February 12th: The left ureter was dilated to 16 French and both kidney pelvises were lavaged with 1 per cent silver nitrate solution.

February 17th: The patient was discharged to return for further treatment. The urine at this time still con-

tained much pus and the culture was positive for colon bacilli. He returned for less than one month and his general condition was much improved.

April 12th: The patient returned at my request, when asked about his condition he states that he never felt better in his life and has gained 25 pounds since the last operation. The urine at this time still showed many leucocytes and the culture was still positive for colon bacilli. Roentgen-ray examination disclosed a small stone in the pelvis of the left kidney.



Fig. No. 4. April 12, 1925. Roentgen ray examination showing small stone in left kidney pelvis.

This patient belongs to a class of individuals who call upon their physician only in emergencies, when the crisis is over they return to their homes and calmly wait for another. Each operation in this case was, I believe, a life saving proposition. Post-operative treatment could not be carried out and consequently his interval of comfort was short. The first examination showed the presence in the urine of a pyogenic infection and this infection still exists.

The contributory causes of urinary

calculi are many and varied, the constant factors in this case were infection and obstruction.

Hunner maintains that ureteral stricture is the commonest cause of recurrence of renal and ureteral calculi. The work of Bumpus and Rosenow has shown us the importance of eliminating foci of infection in the teeth, tonsils and sinuses in a study of urinary calculi.

Ochsner and Rovsing believe that two liters of distilled water daily will prevent recurrence.

Cantani has outlined a sugar free diet which he includes as post-operative routine in all cases.

Lau emphasizes the necessity of relieving obstruction whenever present, and the correction of all known anatomic, metabolic and bacterial irregularities. He states that repeated cultures from the urines of the involved kidney in his recurrent cases *B. coli communis*, *proteus*, or *pyocyaneus* in all cases and in all of them some form of stasis had been present.

Walker maintains that uric acid and calcium oxalate stones recur rarely while phosphatic calculi recur frequently. This is borne out by the reports of other writers, but in cases of long standing a mixed stone is usually the ultimate result.

Conclusion

To summarize these remarks the following conclusions may be drawn:

1. Obstruction should always be sought for and relieved. Good drainage is probably the most important preventive measure.
2. Infection is practically always an attendant factor in recurrence of urinary calculi and should always be combatted.
3. Foci of infection should be removed.
4. Recurrence of renal calculi are much more frequent when nephrotomy is performed than when pyelotomy is done.
5. Operative technique should include precaution against left-over particles of calculi.

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PHYSICAL UNFITNESS A RELATIVE TERM

Physical unfitness is a term merely of relative significance, according to Dr. Chester T. Brown, associate medical director of the Prudential Insurance Company of America. A man may not be fit to fight or to undergo the strain of prolonged or strenuous muscular exertion, and yet outlive the warrior or the athlete. If he is normal, he is fit, and it has been the experience of Dr. Brown and other medical authorities concerned with the problems of life underwriting that fitness, physically speaking, is the rule among men under forty.

During the world war, or rather when the United States entered it and put the draft law into effect, there were enough rejections on physical grounds to create the impression that this was a nation of flatfooted men born with a remarkable assortment of bodily defects. But this, Dr. Brown says, was the result of an attempt to apply to vast numbers of recruits for the fighting forces the extra high standards devised for a peace time army which prided itself on the physical excellence of its personnel.

As a matter of fact Americans meet the medical tests devised to support insurance standards based on normal life expectations extremely well. Rejections of applicants for policies have been steadily decreasing in number for approximately fifteen years. They now represent, in the experience of the Prudential at least, only 6.02 per cent of the total number of applicants com-

pared with almost twice that ten years ago. But the significant feature of this showing, pointed out by Dr. Brown, is that most of those rejected had passed out of youth and attained the age at which physical imperfections and impairments begin to manifest themselves.

There has been an improvement of more than two and a half per cent since prohibition went into effect, but Dr. Brown was not inclined to attribute much of the credit for it to the Volstead act.

"It is more likely the result," he said, "of our greater appreciation of healthy bodies, though it remains true probably that many of us eat too much and are inclined toward excesses in other ways—straining hearts, for example, by too much exertion in competitive sports. If this were not so, there would be fewer rejections of insurance seekers at age 40 and beyond. It is also attributable in some part to health propaganda by organized bodies devoted to the object of increasing the span of life. But most of the credit perhaps is due to the fact that insurance companies have found their experience has warranted liberalization of their requirements.

Since 1911, when the percentage of rejections almost matched the high mark of 15.15 in 1899, a steady improvement in the physical condition of life insurance applicants has been noted by Prudential medical examiners. In 1911 the percentage of rejections was 14.89.

"Rejections," he added, "constitute the bugbear of life insurance. They deprive people of the protection they or their dependents need. The agents lose the commissions on which his livelihood depends, and the companies not only lose business but also the cost of handling these cases. It is a dead loss all around, and the worst of it is that it is a loss which, as demonstrated by the improvements already noted, can be circumvented. It is merely a question of getting insurance in youth, and of adopting moderation as a rule of life."

SOUTHERN MEDICINE AND SURGERY

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A journal for the promotion and diffusion of usable medical knowledge.

Initiation of a Valuable Movement in the South

It is deplorably true that the South is not contributing to the advancement of the cause of medical science in proportion to its population. In our Society meetings we must quote from the records of the work of doctors of other sections and countries so much more than do they quote us, that we shrink from any attempt at comparison.

Run over in your own mind the important diseases which afflict our people; think of the names which are associated with the additions to the knowledge of these diseases, and be impressed by the preponderance of the *other-lander*. Whose names are inseparably linked with the progress made in the management of cancer, tuberculosis, typhoid, appendicitis, goitre, scarlet fever, gall bladder disease, pneumonia, diphtheria or heart disease?

It is true that we have a few who have carried forward the torch of medical science,—but far too few. And there is some reason to fear that we are become more or less content with this state of things, and are disposed to accept it as a matter of course.

In some quarters, though, this hu-

miliating situation is not regarded with complacency. In the July issue of this journal there was carried an account of the establishment of a fund for providing a biennial prize for original work in general surgery. This fund is the provision of Dr. J. Shelton Horsley, of Richmond, and is a memorial to his father, Mr. John Horsley of Nelson County, Virginia. Only graduates of the Medical Department of the University of Virginia are eligible.

It is the intention of the donor to stimulate work of a fundamental character, which will enlarge the horizon of surgery by the establishment of a new principle, or the development and application of old ones along new lines. The interest centers in the Science of Surgery rather than in its Art. In case no thesis submitted is deemed worthy, no prize will be awarded; thus insurance is made that the real purpose of the foundation shall be realized.

The importance of measures of this nature can hardly be over-estimated. We do not especially mind being ignorant; but we tremendously hate to have our ignorance exposed. Doubtless prizes will be provided and many other agencies will come into play to gently force us out of our present unfair attitude toward ourselves, which makes us glorify the *practical* man who attains a local success, never realizing that the really big things, which bring the highest honors, are done through painstaking investigation, experimentation, — research. Too many pride themselves on being included in the note of Mr. Roosevelt to Mr. Harriman, "You and I are *practical* men": too few realize the full truth of Disraeli's words, "Practical men are those who practice the mistakes of their ancestors."

Beneficence Indeed

"The bulk of the E. D. Latta estate will go to four charitable and philanthropic causes." Thus begins a newspaper account of the disposition this good man willed should be made of his accumulations. And the paragraphs

which follow bear out the promise of the prelude.

Though far from insensible to the great-heartedness which prompted the provision for other worthy causes, we must be peculiarly impressed with the benefactions which will increase the facilities for the care of the sick.

One-half the income from approximately two millions of dollars goes to the Mission Hospital, Asheville. Already one of the best equipped hospitals in the state, and surrounded by medical men of the first rank, by the aid of the funds thus provided it will doubtless become a really great institution for healing and teaching.

The Orthopedic Hospital, Gastonia, obtains half the sum given the Mission. Every one rejoices at each strengthening of the hands of those engaged in the straightening of the twisted bodies of these little folks.

More and more material support is needed as the work becomes known far and wide through the return, leaping and rejoicing, of those who went out crooked and deformed.

And there is more in this than an isolated instance of the desire of one man in whose heart was the milk of human kindness: it is a symbol which betokens the earnest desire on the part of many of those who have grown wealthy, to do the most possible good to their fellows; and no higher compliment could be paid to the regular medical profession than that of having its institutions chosen as the means of carrying out the provisions of this wise benefaction.

With the spread of knowledge of the work of regular medicine in the best interests of humankind come increased recognition of its worth, added revenues for the enlargement of its activities, and more friends to render impotent the efforts of its hindervers and traiducers.

Bread

Bread is a subject of interest to all. Where there is little opportunity for the exercise of choice the available variety is gladly taken: where many kinds are offered, the faddist and pseudo-scientist

get their innings. For many years we have heard extolled the virtues of all sorts of unusual breads, to the detriment of that kind which is pleasing to the eye and palate.

The reasons are more than one. In many there is very firmly implanted the idea that all agreeable and pleasant things are necessarily sinful and, therefore, injurious. This is but a part of the theory of the innate Depravity of Man, whether or not traced to the Adamic curse. Others arrive at the same conclusion, though starting from an almost diametrically opposite premise; which is, that Nature, having provided the wheat as it is with its many component parts, intends that it shall be taken without subtraction. It is obvious that this line of reasoning would at once take us back to eating it raw, or even swallowing it whole; but such little inconsistencies fail to impress these close reasoners.

Most of those writing in favor of the various dark breads fail of entire ingenuousness in stating the proposition this being usually given as to which is the more nearly complete food; whereas, the question of real importance is, which more usefully fits into the average mixed dietary?; in other words, which kind of bread comes nearest to doing the job of *bread*?

In a recent issue of "Baking Technology," Dr. E. V. McCollum, of Hopkins, discusses some of these matters after his usual careful style and states his definite conclusions with the utmost plainness, the gist of which may be conveyed by quoting only a few lines: "White flour keeps much better than whole wheat flour. . . . The American public likes a white flour bread and I do not see any reason why this taste should be disturbed."

It would seem that this, from a man who has studied foods as Dr. McCollum has, would serve to settle this specific question until new evidence is adduced by trust-worthy and disinterested persons.

Still there remains the background for similar misconceptions and hindrances. A great proportion of the popu-

lation remains, consciously' or unconsciously, imbued with the idea that all our natural inclinations are detrimental to our best interests; due, as some of them say, to the Adam in us. This concept has been a great stumbling-block in the way of rational and successful treatment of the sick, and even today it retains much of its potency for ill.

Walking on hot irons or sitting among thorns from a holy desire to appease a Providence wrathful because of a sin committed by an ancestor, and abstinence from pleasures merely because they are pleasures, differ only in degree; and the same may be said of the aforesaid custom of denying water to a patient burning with fever as related to the prescribing of black bread when the patient prefers white.

All these substitutions are based largely on the assumption that when man, being sinful, craves a certain thing, it would be to his eternal hurt were it given him; and the greater the craving the more imperative the necessity that it be not gratified;—surely a hideous conception of the Plan of Creation!

War on Fakirs

In general it seems that we are living in peace and amity with the Eddyite, the chiropractor and all others of such ilk. It is difficult to determine whether this attitude on our part is brought about by the resignation of despair, or a late awakening to the beauties of "Peace on Earth; Good-will toward Men."

Apparently the Scotland County Medical Society is a marked exception to this rule. According to the "Observer" of July 14, "plans for relentless warfare" on all fakirs and swindlers preying on the sick have been made. The report has a fine ring.

Maybe there's more in a name than we ordinarily think. To illustrate,—citing a contrary case first,—it has been contended that John Wilkes Booth

would never have gotten into trouble had his father not been named for Junius Brutus; and,—coming to direct illustration,—'tis said that when, just before the battle of Trafalgar, Nelson's famous order went out, "England expects every man to do his duty today," a sailor from "Ayant the Tweed," on board the flagship, spoke up for his native hills with, "Scotland kens well eneuch that nae bairn o' hers needs tae be told tae do his duty."

We are for the sentiment of Scotland then and now. If the medical profession with its numbers, its institutions, its history of service, and with Truth on its side, cannot put to rout the charlatans of every kind, its state is truly pathetic; and we can hope to keep going only a little while, and then only by sufferance of the irregulars.

We indulge the hope that Scotland County's Society will leaven the whole lump.

Cleaning Our Own House

The North Carolina State Board of Medical Examiners takes its responsibilities seriously. It is the function of this Board to determine the fitness of applicants who would be admitted to practice, and, insofar as it can, to keep a supervisory eye on those licensed, that they remain worthy.

In many instances such boards pay little attention to the activities of those they have licensed; but, under the Presidency of Dr. L. N. Glenn, our own Board is actively and energetically exercising itself toward the expulsion of those who bring discredit on the profession, and who manifest characters showing that they are unsafe and unworthy for the tasks of a doctor.

With the cooperation of the rank and file of the profession this Board can remove this cause for reproach in our own ranks, and place us in a more advantageous position for an attack all along the line on all irregulars.

Amends

Through inadvertence the title of Dr. G. H. Macon's excellent discussion of, "Has Alcohol a Place as a Therapeutic Agent?" was omitted from the index of our July number. We recommend a careful perusal of his thoughtful dealing with a subject of much importance.

DEPARTMENTS

PEDIATRICS

FRANK HOWARD RICHARDSON, M.D., *Editor*
Brooklyn, N. Y. and Black Mountain, N. C.

On Preventing Colitis

If there is one word that spells consternation and panic to the Southern mother, it is COLITIS. A year ago, we spoke in this column of the fascinating possibility of the elaboration of a protective vaccine that would protect babies against this scourge; and we mentioned the fact that one well-known Southern laboratory worker was nearer to getting such a protective inoculation upon a working basis than had hitherto been done. This original worker is the editor of the department of this journal devoted to Clinical Pathology, Doctor Harvey P. Barret, of Charlotte.

If we limit the term *colitis* to the disease designated by some as infectious diarrhea, and characterized by acute onset and marked temperature and mucous and bloody stools, we shall do well to name it more particularly *bacillary dysentery*, as we shall thus be helped to realize that we are dealing with a disease entity as specific in its nature as the typhoids, and in fact resembling these in many ways. Like the typhoids, there are several varieties, chief among these being the Shiga and the Flexner types. Of these, it has been found by Barret that the latter, in many differing strains, predominate in this part of the world; therefore, if a patient is rendered safe by a vaccination against the commoner strains of Flexner, it seems fair to suppose that he is fairly safe from "colitis," or bacillary dysentery, in the South.

The practical objection to such protective vaccinations has consisted in the fact that the reactions, both local and general, following such vaccinations, have been of a startlingly severe character. So true has this been, that the at-

tempt to secure such protection was almost abandoned, as far as the hypodermic route was concerned. It remained for the French, however, to elaborate a procedure for the protection of adults against dysentery, by way of the mouth. This route has proved so free from disagreeable reaction, that it offers a most alluring field for experimentation with our problem of securing a protection for the American baby. Following the work of an animal experiment, in Washington, D. C. some months ago, Barret has elaborated a vaccine for mouth administration, which has already shown great promise of giving us the protection against colitis that has been so eagerly awaited. Although he is not yet in a position to promise anything, and of course cannot be until much massive demonstration work has been done on the administration of the vaccines to communities, he has at least demonstrated that it can be given with absolute immunity from disagreeable reactions, and that it can do no harm whatsoever. On the affirmative side, is already the history of its administration to some three hundred babies in Charlotte this spring and summer, without disagreeable incident. Of these cases, but two have developed any symptoms of dysentery since the protection was administered; and there was good reason to believe that these two cases were due to Shiga and not to Flexner strains of the dysentery bacillus.

While it is of course too early to promise anything as to the length or the degree of the immunity produced, it is nevertheless such a hopeful and promising bit of constructive preventive health work, that we cannot refrain here from chronicling it, together with the very satisfactory results that have attended its use so far. It is to be hoped that several communities in which the morbidity and mortality rates from bloody

dysentery have been discouragingly high and discouragingly uninfluenced by protective measures leveled against bad milk, bad sanitation, etc., may embrace this opportunity to use a new weapon against the scourge, not only as a means of protecting themselves, but also as a necessary tryout to see what there is to this most promising piece of advance research work. The fact that it is harmless should prove a most potent inducement to giving it a trial. If successful, we shall have robbed another disease of childhood of its terrors, and added a fourth to the three preventable and hence unnecessary scourges,—smallpox, diphtheria, and typhoid.

UROLOGY

A. J. CROWELL, M.D., *Editor*
Charlotte

'Phthalein Elimination Curve

Shaw in the *Journal of Urology* XIII: 575 presents a study of the curve of elimination of phenolsulphonophthalein by the normal and diseased kidney.

In the "normal" case the curve of excretion showed slight variation the constant features being the presence of 8 to 15 per cent at the end of 5 minutes, the peak of elimination invariably occurring during the second five minute period followed by a rapid fall after the first 15 minutes. In every case over half the total amount of dye recovered in two hours was eliminated during the first fifteen minutes. (We have had opportunity to test out both kidneys separately by minute intervals in patients with healthy kidneys and have seen the peak of exertion to be reached usually during the sixth minute following the intravenous administration of the dye, this followed by an abrupt fall.) Shaw also showed the amount of dye excreted by normal patients to be independent of the fluid output.

In the cases showing kidney damage due to the back pressure of prostatic obstruction the total two-hour output did not indicate the extent of the impaired renal function. The curve of elimination showed striking variation

from the composite normal curve, the chief characteristic of the former being a low output during the entire period of thirty minutes, the peak of elimination not being reached until the fourth fifteen minute period while the excretion of 'phthalein at the end of two hours showed an excessive quantity was still retained in the body.

In subacute nephritis and chronic parenchymatous nephritis while the total 'phthalein excretion might be normal in two hours a curve plotted by fifteen minute intervals showed a characteristic curve departing definitely from the normal. While the initial period amount was fair, it was much lower than normal and the peak was not reached until the second period.

In cardio-vascular hypertensive renal disease the total output was lower, the peak was reached during the first fifteen minute period but was very much lower than normal. The decline of the curve after the first period was very gradual. At the end of the two hour period the curve was above the normal level and there was excessive retention of dye in the body.

In cases showing cardiac decompensation with chronic passive congestion of the kidneys, the initial output is low and the first two or three periods show about the same level with a gradual decline of the curve thereafter. The total is low, there is increased retention but with improvement in the cardiac decompensation and a relief of the congestion, the peak of the initial period gets higher with a subsequent more rapid decline in the curve.

Hexyl Resorcinol

Leonard (*Journal of Urology* XII: 585 and *J. A. M. A.* 83:2005) reports on the derivation and experimental work with the alkyl derivatives of resorcinol. Young and his associates of the Brady Urological Institute, from their investigative work over a period of years expressed the following characteristics necessary to the ideal urinary antiseptic: "It should be chemically stable, non-toxic and non-irritating to the urinary

tract, it should exert an antiseptic action in high dilution in urine of any reaction and should be eliminated in high percentage by the kidney." After a study of over 400 compounds, many of which were especially synthesized for the purpose, Davis concluded that no such substance had ever been produced. The author's work, however, tends to show that at least one of the newly-tried alkyl derivatives closely approaches the requirements for an ideal urinary antiseptic.

Rettger found there was a pronounced increase in bactericidal properties with the addition of each carbon atom to the alkyl chain, while Leonard's biological examination showed a coincident reduction in toxicity to laboratory animals, such that with the stable hexyl derivatives the peak of bactericidal power was reached with a phenol coefficient of 46—a fifteen thousand per cent increase over resorcinol—while the drug is described as non-toxic to rabbits and man, even when repeated doses are given over indefinite periods of time. No injury or irritation of the urinary tract has been found to follow its use. It is excreted in sufficient concentration in the urine of *any reaction* to produce a urine with bactericidal power. Therefore this investigator concludes that all the requirements of an ideal urinary antiseptic have been met.

In clinical use he summarizes his findings somewhat as follows: "Urinary infection due to *B. coli* and confined to the urinary mucosa from the kidney pelvis downward can be cleared up completely with no other treatment than hexyl resorcinol by mouth if the bacterial count in the urine is low. If the count is high, as is usually the case in *B. coli* infections, the mass action of the free hexyl resorcinol excreted in the urine is insufficient to complete the disinfection until the count is reduced by local treatment. Persistent treatment (thirty to sixty days) is usually necessary in these cases. If the infection has invaded the renal parenchyma, as is usual in cases of long standing, hexyl resorcinol alone or combined with any

known method of treatment will not complete the disinfection, and frequently fails to influence it. Urinary infections due to the usual gram-positive cocci ordinarily clear up promptly, completely and permanently with no other treatment than hexyl resorcinol by mouth."

Eye, Ear, Nose and Throat

HENRY L. SLOAN, M.D., *Editor*
Charlotte

Detachment of the Retina

The management of detachment of the retina often confronts the doctor with troublesome questions. First of all, in any intelligent treatment of retinal detachment, the cause should be determined. We find the causes to be varied. I think that we all feel that intraocular new growth should be thought of at once. Such a possibility must be ruled out before we can undertake any line of treatment with any feeling of security. The choroid is not infrequently the seat of sarcoma. In this contingency the eye must be removed at once. Only by early enucleation before metastasis has taken place can there be any hope of relieving this condition. Only recently I had a patient to die from metastasis of an intraocular sarcoma to the liver, three years after enucleation of an eye for sarcoma of the choroid. This patient had complained of loss of vision in this eye for over a year before consulting me. I immediately enucleated the eye upon the discovery of the true nature of her condition, and yet the patient died at the end of three years.

Other causes for detachment of the retina are: high myopia, traumatism, blood effusions, retinal parasites, and diseased conditions of the eye such as retinitis, cyclitis, etc.

The type that presents especial interest is that of spontaneous detachment from serous effusion. The eyeball may have normal tension, and as a rule there is vision in the lower field (as the detachment is usually below) with flashes of light in detached portion. Often

no cause can be found for it. Heretofore, I have regarded such conditions as rather hopeless and have undertaken treatment with much reluctance. I wish to report, in a few words, two cases that I have seen during the last three years:

One patient, Mrs. J. H. W., consulted me about three years ago, with a gibbous detachment of the retina below, involving about two-fifths of the retina. Her vision was reduced to almost nil in the right eye; she had to be led around as she had a cataract in the other eye. No cause could be found for the detachment. She was almost distracted from "flashes of light" in eye with detachment. I suggested to this patient that operative treatment might be of help to her, and also told her that as a rule the outlook was not very hopeful,—in fact, in my personal experience, I had never seen one relieved by operation. However, she said she was willing to take the chance. So on June 6, 1924, I did Meller's chorioidialysis. As a result there is complete reattachment of the retina with restoration of the visual field in this eye. Patient now has 20/100 vision in this eye. She cannot read, but can find her way about while the cataract in other eye is being treated.

Mrs. J. H. M., age 37, consulted me on May 25, 1925. Patient had always enjoyed splendid health when she suddenly lost her vision in the left eye. Examination of her eyes showed that she had a gibbous detachment of the left retina, involving about one-half of the visual field. Patient could see nothing above, and the eye was almost useless. The vision in this eye was 20/200 eccentric. Refraction with a mydriatic was unable to improve the vision in left eye. Right eye, with plus 1.75 sph. plus 0.25 cyl. ax 90, vision is 20/20. Upon general examination of this patient, and examination of the eye, we could find no cause for the detachment, except that possibly the greatest factor in her trouble was the presence of a rather large error of compound, hyperopic astigmatism which had never been corrected. Patient used her eyes in

sewing and clerical work for eight to ten hours a day over a long period before her trouble began.

On June 9, 1925, Meller's operation of chorioidialysis was performed. In three days the retina showed that it was becoming reattached, as there was only small radial folds in the retina below. This patient was examined on August 2, 1925, and her visual fields were almost normal in outline, there being a little contraction up and in. Her vision, under cyclopeic refraction was as follows:

Left eye plus 1.25 sph. c plus 1.00 ax 75=20/30-2.

The result in these cases, in both of which useful vision has been recovered, has given me some encouragement in the treatment of these conditions. I have found no operation for this condition so simple of technique, and yet so successful as Meller's chorioidialysis.

MENTAL AND NERVOUS

JAMES K. HALL, M.D., *Editor*
Richmond

The Great Emotionalist

The death of William Jennings Bryan removes from the world the greatest emotionalist of the generation. There is little doubt that the moving eloquence of Patrick Henry in the little church in Richmond precipitated the Revolutionary struggle, or that the persuasive power of the personality of Henry Clay over his fellows postponed the Civil War, but neither man, consummate orator though he was, moved upon the feeling of the American people so profoundly as the crusader lately laid to rest in Arlington. I heard him speak on many occasions, but not once, as I remember, did he appeal to my reason or cause me to contemplate any change of personal opinion. But he played upon my emotions mightily, and pride arose in me always when I looked upon his superb physical manhood; when I heard enraptured in sonorous phrases the golden music of his wonderful voice; when I experienced in my own being and in my observation of others the mystic majes-

ty of the dominating influence of, his mind and his personality over all human matter that came within the range of his presence. The effect of his appearance and his speaking upon those around him was conclusive proof that mind does affect matter.

Perhaps he was not rational; perhaps he made little use of reason in reaching his conclusions. He felt; he acted; and he was able to make others feel as he felt and to act as he wished them to act. Rationalizing and reasoning were unnecessary for him; the functioning of his own mind and the minds of others around him was controlled by his emotions.

He was a conservative revolutionist. He came out of the great store-house of American dust of which so many great leaders have been fashioned. Because of his origin and because of his peculiar emotional make-up he was able to sense the latent yearnings of the great mass of common people, and his eloquence enabled him to make articulate for them their mute longings. One's emotions are as peculiar to one's self as the color of one's eyes, or as the natural quality of one's voice, or as the character of one's gait. Reasoning may affect the display of one's feelings, but not the quality of one's emotions. The critics of the dead leader made the mistake of being unwilling to understand that out of his emotions, and not out of his intellect, arose his attitudes and his actions. Because many could not understand his feelings they could not believe in his sincerity, his honesty, his motives, and his purposes. Who can understand his own feelings, much less the feelings of another? His appeal was to the ears; he left his audiences as helplessly enchanted by the music of his oratory as if they had been played upon by the celestial soothing of a cathedral choir. But no great emotion can long abide, and in the absence of the witchery of his voice and the appeal of his presence many turned from him. In the colleges the study of his career ought to constitute a good clinic in the psychology and the physiology of the

emotions.

He will not be forgot, but the characters that live in history are the careful, reasoning, cold intellectuals—here in America Hamilton, Jefferson, Washington, Lincoln and Wilson. Bryan made no intellectual contribution to the ages—in statesmanship, in science, in religion, words were the strings of his golden harp, and upon them he played a sweet melody for more than a generation. The memory of Roosevelt and of Bryan will slowly fade away.

A Good Book

A medical book in the form of a manual is usually so sketchy that it makes little appeal, affords scant information, and carries with it no charm at all. But lately I have come upon "A Manual of Psychiatry for the Medical Student and General Practitioner," every word of which I am glad to have read and most of which I heartily approve. Dr. Paul E. Bowers, of Los Angeles, is the author, and the volume bears the imprint of the W. B. Saunders Company. The book has 365 pages; the print is of good size; overwhelming medical words have no place in it, and the style is engaging. The various types of mental disorders are discussed, and so are many organic nervous conditions, and many physical infections which frequently carry with them associated mental symptoms. Most of the terms necessarily made use of in describing mental disorders are briefly and sensibly defined and illustrated—e. g., delusion, hallucination, illusion, amnesia, obsession, and orientation. The final chapters in the book deal rather fully with mental deficiency, insanity, and crime, and there are instructions about how to proceed with the mental examination of a patient and an outline of the procedures necessary for measuring the degrees of intelligence in the mentally subnormal.

Dr. Bowers evidently has sound sense and reliable judgment, and he has sent forth a little volume that should find lodgment on the study table of at least every general practitioner. Frequent

contact with the volume will prove not only enlightening to medical men in general but acquaintance with it will awaken their interest in mental diseases. All sorts of medical specialties are crowded and overcrowded except psychiatry. There are too many doctors in the world who have no interest in mental abnormalities except to get away from them. I think of the book by Bowers as I think of Da Costa's Surgery—thoroughly commendable.

RADIOLOGY

JOHN D. MACRAE, M.D., *Editor*
Asheville

Interpretations of Chest Films: The Anatomical Background

A knowledge of lung anatomy and of pulmonary pathology is necessary to the interpretation of chest films.

Any medical student should be able to describe the lungs, giving the lobes and fissures and distribution of the bronchial tree. Unfortunately when we get away from the dissecting room and the teacher, few of us give thought to lung anatomy. Consequently it is not common to find a physician who visualizes the progress of pathological changes which are going on in the lungs of a patient.

The right lung is divided into upper, middle and lower lobes. The left, into upper and lower lobes. The bony wall of the chest on the outside, the mediastinal organs between the two sides of the chest and the diaphragm and abdominal viscera below determine the external form of the lungs. The pleura and pleural cavity undergoing changes, in turn produce lung changes as to form. Also changes of form in the mediastinal viscera will bring about corresponding pulmonary distortion.

The bronchial tree is beautifully seen in stereoscopic films of the chest, but one must think of more than the bronchi when examining the trunk shadows which radiate from the hila to the lobes of the lung. Remember that each trunk is the shadow of a composite structure. The trunk is composed of a bronchus,

two veins, an artery and lymphatic masses and channels; all of which are bound together by connective tissue. Whatever produces dilatation of veins, arteries or bronchi or hypertrophy of lymph masses increases the size and character of the trunk shadows.

The distribution of trunks is constant and by locating a shadow in a lung film with relation to a trunk we are able to say which lobe it is in and whether close to anterior or posterior chest walls.

The trachea is visible in well made chest films. It is seen to bifurcate in front of the body of the fourth dorsal vertebra. Its main stem bronchus to the right passes downward almost in line with the trachea. Consequently the right bronchus is most likely to harbor foreign bodies which may be inspired. This main stem bronchus then divides into three trunks to the upper lobe known as vertebral, first interspace trunks. It is generally easy to space and second interspace trunks. It is generally easy to trace them well out into the middle zone of the lungs. Here their terminal branches are more or less visible according to whether pathological changes are present or not. A single trunk passes outward from the hilum to the middle lobe and the main stem bronchus to the lower lobe divides into four main bronchi which in turn divide and subdivide until we have to the lower lobe a greater number of trunks than elsewhere in the lungs. Also they are thicker than are those to the upper part of the lungs. This is because being the most dependant part of the respiratory apparatus the greater quantity of foreign material, dust, bacteria and so forth drifts to them. There is consequently a greater need for lymphatics here to take care of foreign and infectious material. Lymphoid tissue undergoes hypertrophy as a result of repeated irritation. Therefore the shadows of trunks to the lower lobe are denser and broader than elsewhere in the lungs but it is natural that they should be so, even in health, for the above given reasons. Also as there are

a greater number of trunks in the lower lobe their shadows are more pronounced.

The left main stem bronchus passes outward from the trachea and the arch of the aorta curves over it. The fact that it gives off almost at a right angle from the trachea explains why foreign bodies are seldom inspired into it and the left lung. The upper lobe on this side receives the same number of trunks as on the right except that a separate trunk passes out and down and forward to the lower part of the upper lobe, that part designated as the lingual tip, which lies slightly to the front of the left side of the heart. The lower lobe also has a corresponding distribution of trunks as compared with those of the right side.

As the early diagnosis of tuberculosis depends on the recognition of small lesions in the fine divisions of the lung we must consider its minute anatomy. No one has done more beautiful work in this field than Dr. William Snow Miller.

Each bronchus terminates in bronchioli respiratorii which lose their ciliated epithelium and develop air cells springing directly from their walls. They then divide into ductuli alveolares which have a greater number of air cells. The ductuli are connected with atria which are irregular spaces having two to five sacculi alveolares springing from them. The sacculi break up into alveoli pulmones and the parenchyma of the lung is thus formed.

A primary lobule of the lung is that area which consists of a ductulus alveolaris, the air spaces connected with it, their blood vessels, lymphatics and nerves.

A group of fifty to two hundred primary lobules with an intra-lobular bronchus all enclosed by connective tissue septa form the secondary lobule. Innumerable secondary lobules make up the lung.

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*
Charlotte

Diet in Pregnancy

Guthrie. The Journal of the American Dental Association, July, 1925.

"Whatever alters the metabolism of the expectant mother affects the growth of the fetus. So, we are giving thought to the pregnant woman in our work of preventive dentistry. The old adage 'a tooth for a child' is not an adage of my Southland alone. Many old practitioners in all parts of the country cling to it. We must cooperate with the medical profession, particularly the obstetricians and have them prescribe for our patients the diet necessary to assure good healthy teeth in the mouths of future generations."

In discussing this paragraph Dr. Hayden says, "Dr. Guthrie's first suggestion is that we cooperate with the medical profession, particularly with the obstetricians, and have them give our patients the diet necessary to make good healthy teeth in the mouths of our future generations. I approve of the suggestion, that we cooperate with the physician and I should like to have Dr. Guthrie tell us in what manner she goes about collaborating with the obstetrician who has not referred the case to her. In the event the physician has not instructed the pregnant woman in the matter of foods, does Dr. Guthrie supply the lack? What is the responsibility of the dentist in instructing patients as to proper diet for the building of sound teeth in the child and for the maintenance of mouth health in the mother?"

The responsibility of the dentist is greater than he has generally assumed, as this is one of the great borderline subjects of medicine. The diet of a pregnant woman should be directed by the obstetrician. But the obstetrician should watch for breaks in his fences, or the dentist will step in, recognizing the importance to both the expectant mother and the child of diet for the keeping and building of normal teeth, as well as the

usual reparative and prophylactic dental work.

At this point relations between the dentist and physician may become strained. It should not be so, for frank cooperation will bring the professions closer and enable them to render a complete service to those dependent upon them.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
Charlotte

Displacement of the Semilunar Carpal Bone

From Report by John D. Adams, M.D., *Journal of Bone and Joint Surgery*, July, 1925, p. 665.

Statistics supplied from broader fields of activity tend to stimulate us to a careful analysis of our own personal experience in any one type of injury. Over a period of one year there passed through the Industrial Accident Board of Massachusetts 5,062 injuries to the wrist. Of this number nineteen cases were diagnosed as uncomplicated dislocations of the semilunar bone of the wrist. It is natural to conclude that of this number all had impaired function. Otherwise they would not have been brought before the Board for consideration. Lack of proper filing facilities makes it impossible to collect these cases to ascertain the history or end-result. Therefore this fact is of interest solely in giving us a percentage on which to base the incidence of occurrence of this injury.

It is the writer's opinion, taken from his own actual experience and that of others, that the displacement of the semilunar carpal bone occurs more often than it is actually recognized. Three cases of this series were treated for strain. In all cases roentgenograms were taken and displacements unrecognized.

Stimson, in his very excellent work on fractures and dislocations, states that "the x-rays have shown that dislocation of the semilunar bone, either alone or in combination with fracture of the scaphoid, is far from uncommon and is second in frequency to fractures

of scaphoid." He further states: "Of each of these there are many clear uncomplicated cases. Most of the injuries to the wrist are to the lower end of the radius. X-rays following injuries in this region should be carefully examined as to the presence of fractures; also to relationship of the carpal bones to each other and to radius and ulna."

This analysis is based upon a collection of twelve cases, covering a period of two years and may be classified under five headings: (1) mechanics of the displacement; (2) classification of the various types; (3) various forms of treatment; (4) end results; (5) conclusions.

In a careful analysis of the roentgenogram one is impressed with the variation in the mechanics as to the degree of malposition of the semilunar and its relationship to the radius and carpus. The question immediately arises as to whether we are dealing with a real dislocation of the semilunar or a relative dorsal dislocation of the carpus.

The mechanics of adduction and abduction take place through the distribution of motion in the carpus round an axis drawn antero-posteriorly through the center of the wrist joint. In the mid carpal joint there is a fair amount of flexion and extension and a very small amount of rotation. A lateral gliding motion between the carpal bones accounts for the flexion and extension, whereas the rotation is in the almost true ball and socket joint of the head of the os magnum in the cavity formed by semilunar and scaphoid on its own axis.

The semilunar plays an extremely important part in the mechanical function of all the movements in the wrist. Its position is more or less the keystone in both diameters, and, therefore, is the stabilizing factor in its mechanics.

A constant factor appears in the history of every case in the series, namely, that the force producing the injury has been applied with the hand in forced dorsiflexion. The displacement of the semilunar has always been anteriorly,

The classification might appear as follows:

Class A—Os magnum semilunar displacement.

Class B—Extra articular, or radial os magnum complete displacement of the semilunar. (This type the only true dislocation.)

Class C—Mid carpal dislocation (posterior.)

All treatment must be based solely upon the idea of end function. In the majority of these cases we are dealing with bread winners in industry. The only basis on which we can classify our results is on the ability of the individual to do the work he performed prior to his injury.

Treatment falls under four headings—(1) closed reduction; (2) open reduction; (3) removal of the semilunar; (4) untreated, or "leave it alone."

The author's conclusions are:

(1) This injury occurs far more often than is recognized.

(2) Stereoscopic pictures should be taken of all wrist injuries.

(3) A true dislocation of the semilunar carpal bone occurs only when it becomes extra articular; namely, when its relationship with both the os magnum and radius has been completely disturbed.

(4) The term "displacement" may be applied to any degree of change from its normal position.

(5) The persistent dorsal displacement of the mid carpal row produces a permanent disability in the wrist. In the early instances it may be restored to normal position; but if allowed to remain, it is extremely difficult, if not impossible, to cure.

(6) Closed reduction should be attempted only within forty-eight hours of the injury, and then with extreme caution as to traumatizing the flexor tendons and the articular surface of the carpal bone.

(7) Open reduction is attended with a great deal of danger of traumatizing the articular surface of the flexor tendons. The convalescence is long and the end results unsatisfactory.

(8) Removal of the bone should be done in all cases where dorsi and palmar flexion are limited to the extent of interfering with the patient's work. Early motion following operation should be emphasized.

(9) In Class A cases, where the interm between injury and operation does not permit of the closed reduction method and where the rotation on the radial articulation is not sufficient to cause displacement of the articulation with the os magnum, thus leaving a sufficient function in flexion and extension, the operator should carefully consider non-treatment.

(10) All end results should be based upon the ability of the individual to do his original work.

SURGERY

A. E. BAKER, SR., M.D., *Editor*
Charleston

On Draining the Abdomen

For forty years there has been a wide difference of opinion as to the treatment in suppurative peritonitis, and agreement has not yet been reached. Dr. Albrecht, on "Drainage of the Peritoneal Cavity," gives a review of the history of this subject.

He states that because of the relationships of the peritoneal cavity, adequate drainage is rendered difficult or even impossible. Albrecht mentions the anatomico-physiological defense reactions of the peritoneum. These are the secretion of a transudate of high bactericidal power, which is greatest at the beginning of the infection and becomes less as the endothelium becomes more severely damaged by the toxins; the exudation of fibrin, which is the result of the destruction of endothelial cells (Graser) and makes the exudate cloudy; phagocytosis, which is very active at first but soon diminishes; and the absorbing power of the abdominal wall.

The transudate or the phagocytosis destroys the bacteria, and the fibrin causes adhesions, thereby localizing the

inflammatory process but increasing the difficulties of surgical treatment, the evacuation of pus and effective drainage. Because of the great absorbing power of the abdominal wall, the bacteria and their toxins are brought into the blood or lymph stream very quickly and are there rendered innocuous insofar as this has not been done by the transudate and the phagocytes. In the absorption of bacteria, the lymphatic openings in the central tendon of the diaphragm are of the greatest importance (Harberer and Clairmont). The great omentum, as a lymph organ, also plays a most important role in the defensive battle. Its absorbing activity is increased by its mobility; it is kept in constant motion by the peristalsis of the small intestine and is therefore always prepared to attach itself to wounds or defective areas and to enclose and absorb foreign bodies.

The organic defensive reactions are most intense at the beginning of the infection, that is, in the first forty-eight hours, and then decrease hourly. Our task is to support the organism in the battle, that is, to render conditions in the abdominal cavity as nearly normal as possible through control of the source of the infection, removal of the pus, exact hemostasis, and closure of every defect in the peritoneum. If one of these four requirements cannot be met, the abdomen must be kept open.

Tamponade or packing off with gauze has been erroneously called drainage. The tampon acts by suction, but does not drain. When it becomes saturated, it acts as a foreign body filled with fibrin and cellular elements, and is a culture medium for bacteria. The drainage tubes drain only the canal that it makes itself. The omentum or other mobile organ becomes attached to it and closes it off from the peritoneal cavity. The secretion is due for the most part to the irritation caused by the tube (Yates). When the physiological defense still functions, i. e., in the beginning stages of the inflam-

mation, the drainage canal will be closed off. If the organic defense is already paralyzed, the process being advanced, the abdominal cavity must be drained at its lowest point, at the base of the pouch of Douglas. Then drainage may be achieved successfully, since the movement of the omentum and intestines and the fibrinous exudation have ceased and the bowel floats freely in the pus-filled peritoneal cavity.

It therefore appears that in the beginning of a suppurative peritonitis, an attempt at drainage is futile and may even be injurious as it disturbs the peritoneal defense and as a result of its continuous irritation as a foreign body, it decreases the general resistance of the organism. The mobility of the organs, which plays an important role in the beginning of the infection, may be reflexly hindered by it, and the continuous lymph stream which flows between the serous surfaces towards the diaphragm, may be obstructed. Absorption also, that powerful factor, may be injured and the intra-abdominal pressure, which is important for absorption, may be lowered. Besides disturbing the physiological defense, drainage may do other damage. It prolongs healing, causes pain on its removal, and may produce pressure gangrene, adhesions with subsequent ileus, and hernia of the abdominal wall.

However, as the picture of suppurative peritonitis is a variable one, no fast rule for all cases can be laid down; the indications for drainage must depend on the experience and inclinations of different surgeons. At any rate, the attempt is being made today to restrict drainage of the peritoneal cavity as much as possible. If the requirements mentioned are met, the peritoneum and musculature should be completely closed. Function of the peritoneal defensive reactions may be included as an additional stimulation. This can be assumed if not more than forty-eight hours have passed.

In conclusion, the author cites statistics from the Queen Elizabeth Hospital of Vienna for the last three years. In sixty cases of peritonitis, most of which

were due to appendicitis and all of which were operated upon within the first forty-eight hours, closure was effected without drainage. In the one fatal case, autopsy revealed status thymicolymphaticus. Of eighteen cases in the intermediate stage, drainage was established in five. Two of the cases without drainage were fatal. There were fifteen late operations. Drainage

was established in three of four cases of diffuse suppurations, but all four cases were fatal. Of eleven cases of circumscribed peritonitis, ten without drainage, all were cured. In one case, a walled-off process was not found. Here, the introduction of a drainage tube was necessary since no function of the protective apparatus can be depended on under these circumstances.

The British Cancer Research

The newspaper sensation of the current week, aside from the attempt to prevent by legal trial in Dayton, Tenn., the extension of knowledge regarding evolution, has been the announcement that certain British investigators have discovered an ultramicroscopic organism in association with experimental tumors in animals. During the last twenty years, numerous investigators have reported the finding of various bacterial organisms, both those visible under the microscope and the so-called ultramicroscopic variety in association with human cancer. None of the organisms thus far found that have been alleged to be the specific cause of the disease have been confirmed as the actual cause. Indeed, the majority of investigators who are devoting themselves particularly to studies of the cause of cancer believe that the disease is not caused primarily by a bacterial organism, but that it is the result of other factors, chemical or physical or related to some specific substance within the human cell, not yet determined. At the same time, it seems reasonable to believe that bacterial organisms of various kinds may find cancer tissue a suitable place for their growth within the human body, and may thus modify in various ways the growth and development of the cancer. Some years ago, Peyton Rous of the Rockefeller Institute described an ultramicroscopic organism or filtrable virus associated with certain experimental tumors in chickens. Recent studies indicate that this organism may be of the type of the much discussed "bacteriophage." Evidently the British investigators have pursued somewhat farther the work of Peyton Rous with this form of tumor, and their reports is to some extent a confirmation of his investigations. It will be a considerable step to find the relationship of such an organism to cancer as it occurs in man and obviously the next procedure will be to determine whether any such relationship exists. Obviously, also, the present series of experiments, while of great interest from a research point of view, has no immediate bearing on either the prevention or the cure of human cancer.—*Jour. A. M. A.*, July 18, 1925.

The Habit of Attending Medical Meetings

Presence at a meeting, hearing discussions and papers not only is of value to the beginner, but has been considered of importance to our masters, says Marcus Feingold, New Orleans (*Journal A. M. A.*, July 11, 1925). Naturally, not all that is transacted in every meeting is of the kind that signifies progress and betterment; some things presented may be of the kind that should be avoided and deprecated. But there is good also in listening to this kind because it teaches how to avoid the mistakes of others. Presence at meetings produces, in different members of the audience, various emotions. These emotions must apparently fall into one or more of the following subdivisions: admiration for the subject or the speaker; feeling of one's own inferiority in having done so little; the desire to imitate that piece of work and that method; the determination not to overlook this or that in the future, and regrets at having failed to observe this and that. Attendance at meetings has often led to ties of the most fruitful and warmest friendships among medical men the world over. History of medicine contains many records of the wonderful effects of exchange of thoughts among friendly spirits, just as these medical meetings. Attendance at meetings must not be limited to those of our immediate circles. The larger the group of individuals banded together, the greater is the probability of valuable and stimulating contributions at that meeting.

An examination was held by the American Board of Otolaryngology on May 26, 1925, at the Medico-Chirurgical Hospital, Philadelphia, with the following result:

Passed -----	137
Failed -----	20
<hr/>	
Total Examined ----	157

The next examination will be held at the University of Illinois School of Medicine on October 19, 1925. Applications may be secured from the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

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MISCELLANY

CHILD MANAGEMENT*

D. A. THOM, M.D., Washington

What is a Habit?

"Habit" is such a common, everyday sort of term, with which everyone is more or less familiar, that it hardly seems necessary to discuss it at all. However, it is in this very fact—that habits are so commonplace and ordinary in the minds of the great mass of individuals—that the danger lies. All too frequently the fundamental importance of forming right habits in early life is minimized or overlooked altogether.

Without any attempt to give a strictly scientific definition, it may be said that habit is the tendency to repeat what has been done before. One develops not only habits of acting, but habits of thinking and feeling in certain ways. Habits in regard to the care of the body—eating, sleeping, eliminating, bathing—are easily formed and vitally affect health. Our manners are a collection of habits; we do a rude or a courteous thing almost without stopping to think. If we did not learn the muscular movements which become habitual through repetition we could never play the piano, run a typewriter, or gain skill in athletics. Of course, children must learn the simpler motions first—the use of knife and fork, the buttoning of buttons, and the tying of knots. The morals of most of us are, to a large extent, the result of habits of thinking formed in early life—our attitude toward the drinking of alcoholic liquors or the taking of others' property, or the problem of sex, as well as our attitude toward other people, whether sincere or deceitful, friendly or antagonistic. Most of our prejudices are the outcome of habits of thinking formed in childhood. Many persons as children develop a feeling about racial and re-

ligious differences which may lead in later life to intolerance and hatred toward their fellowmen. This same attitude of mind is seen in children toward their playmates who have the misfortune of being orphans, or a child whose mother is a scrubwoman, or whose father is a garbage collector, or who is boarded under the care of a child-placing agency. Care should be taken to see that children are early taught kindness and consideration for those less fortunate, for unconsciously they will form their attitudes from the home atmosphere.

Good Habits May Be Taught

Tendencies toward thinking and acting in certain ways, which are called habits, are the outgrowth of training and experience. They are not inherited. We begin to form habits at birth and go on through life, forming them quickly and easily in youth and more slowly and with difficulty as the years advance. The oftener the act is repeated or the thought is indulged in the more lasting the habit becomes.

A young child has certain characteristics that make the acquiring of new habits easy. For one thing he is suggestible; that is, he accepts without reasoning about it anything which comes from a person he looks up to. "My father said so" or "My mother did it" makes a thing absolutely right for a little child. Again, a child naturally tends to imitate the words, actions, and attitudes of the people around him, and this makes it of the greatest importance that older people furnish him the kind of models they want to have copied. Furthermore, a child wants to please those he loves and wants to have they say so. At first it is only father or mother or some one in the immediate family whose good opinion he wants. Then it is the kindergarten or school teacher. Finally, at 9 or 10, the praise or blame of his playmates or of the gang leader, concerns him more than anything else. When this stage is reached parents should not be disheartened and think

*This article is part of Publication No. 143 of the Children's Bureau of the U. S. Department of Labor, Washington, D. C. The entire bulletin may be secured free by writing to the bureau.

that their boy is developing into a black sheep. It is a perfectly natural stage which children pass through and which calls only for greater care in the selection of wholesome companions.

This attitude of concern regarding what other people think is a force that parents may use in developing right conduct. Rarely is a child found who does not care for the approval of some one, and training should make a child realize that it is to his advantage to win approbation for desirable acts. Praise for unselfishness, kindness, and general consideration for others tends to perpetuate that type of conduct.

Mother Love

Interest and love alone on the part of the mother are not enough to assure success in handling the innumerable problems met with in the management of children. The very love of the mother for her child may be the "stumbling block" that prevents her from successfully fulfilling the obligations of her parenthood. This love is invariably associated with excessive worry, anxiety, and at times, definite fear which prevent the most intelligent approach to many problems of childhood.

Over-solicitude on the part of the parent or parents may put the child in an entirely new setting. Children may become self-centered and develop innumerable imaginary complaints simply because illness is looked for and any existing ill health is exaggerated.

Mary, at seven, dominated the entire household. Mother faithfully fulfilled her slightest wish, fearing to cross her lest she become ill. Her sisters patiently shouldered her share of home duties and quietly gave way to her at every point in order to avoid, if possible, the almost inevitable outburst of temper which was so upsetting to the household. Her ready excuses for all occasions were "You mustn't mind what I do; you see I've been sick," or "I'm not strong enough to do that 'cause I've had ups." This may give him incentive to paralysis."

It is true she had lived through more

than her share of illness and was accustomed to admiration and interest from doctors to whom she was frequently shown as an unusual case.

Her "alibi" of ill health helped her over many difficult places in school, and at home special concessions were made for her and she was excused at every turn. Her whole life seemed built about this desire to hold the center of the stage.

Through a radical change of attitude on the mother's part this little girl, who was fast developing into a chronic complainer, has now become a hearty, normal youngster, gayly competing with her sisters in "helping mother," trying each week to learn to do one new task independently, and striving toward an ideal of robust good health rather than desiring the role in life of "interesting invalid."

After a little judicious neglect and ignoring, the alarming physical symptoms which so greatly troubled the mother vanished. The marked tremor of Mary's hands, which made it seem necessary that the mother feed her each mouthful she ate, disappeared, as also did the tremor of voice. After determination by physical examination of the child's condition an appeal was made to her ambition and pride. Her desire for attention and wish to excel were turned away from the goal of ill health. With encouragement on the part of the physician and her mother and with faith in her ability to make good she is now taking part in home and school, standing on her own feet, and learning to face life as it is.

The "Finicky" Appetite

Dainty serving of food goes a long way in arousing appetite. A small table and china "all his own" or being allowed to sit in mother's place at the table may have a great appeal. Let the child know that when he learns to feed himself in a quiet, efficient manner he may then come to the table with the "grown-strive for perfection. Occasionally consult the child's preference about his food, but never let him feel he is free to dictate as to what he will and will not

eat. Teach him that certain foods are required if he is to grow big and strong and rugged like the "Daddy" he adores. Do not insist on pushing him; lead him once in a while. Little harm will result from his missing a meal now and then. There are times when food is repulsive to children for no apparent reason. There are other occasions when their mood is such that they enjoy arousing anxiety, worry, and solicitude in the parent. You will find when this is the case and the child says he does not want any lunch that it is wise to reply that it is quite all right and if he is not hungry he may run out to play. You have thus removed every resistance which he hoped to battle against, and if this is just an emotional attitude it is unlikely that he will take any chances on missing a meal in the future.

Remember that children are quick to copy and if, for instance, grandma is on a limited diet and cannot eat this or that, or if father frankly emphasizes his likes and dislikes, the child is apt to become finicky and notional in his eating. The child who early learns to eat with a good appetite whatever is set before him will be saved much discomfort and embarrassment in later life.

Of course, the child should have plain, nourishing, easily digested food that is well cooked and served in small quantities. Regularity in serving meals is of great importance, not only for physiological reasons, such as keeping the intake of food evenly regulated in order that the digestive apparatus may work smoothly, but for other reasons as well. Obviously, if a child learns that food is available at any hour of the day he will not be greatly concerned in eating at any definite time. It should be understood by the children and strictly adhered to by the parent that if the youngster does not eat at the allotted hour he gets nothing until the following meal. Care must be taken, however, that he is not fed between meals by other members of the family or supplied with pennies with which he can buy sweets to appease his hunger during the interval. The child should not be hurried during the meal, nor should

he be given sufficient time to play and dabble with his food. The ordinary meal for a child should not require over 30 minutes at the most. If by that time he has not finished remove the food without comment.

Overcoming Children's Fears

Children quickly adopt the attitude of their parents, be it one of bravery or fear. Many mothers wonder where their children get their fear of lightning or animals, forgetting that they themselves have shown fear when they thought the children were not noticing.

If the child develops a fear of loud noises and flashes of light, such as thunder and lightning and firing guns, he can overcome it only with the help of intelligent suggestion from the parents. He must see from their attitude that there is no occasion for fear. The mother who is terrified by these situations and whose fear is openly demonstrated before the child can be of no assistance to him. Imitation clearly plays an important part in the development and control of fear. This may be seen, for instance, if things go wrong at sea and a ship is in danger. One panic-stricken person may start a stampede for the life boats, whereas one calm and fearless officer can quell the impending panic and control the situation.

Vague and poorly formulated ideas about death are the basis of more mental anxiety in children than is generally supposed. To one child death meant being buried in a hole, another child had a fear of being buried alive, and many children are disturbed by the line in the evening prayer which is familiar to most children, "If I should die before I wake." It would be impossible to state all the vague fantasies of childhood about this ever-present problem of death, but it should not be difficult to give the average child a conception of death and the hereafter which will do much to allay the common fears surrounding this mystery.

Things said in jest may cause great anxiety to a little child. A man, now a college professor, relates how he suf-

fered for weeks in boyhood because someone told him that if he ate bread and molasses horns would grow on his head. He at once gave up eating that delicacy without explaining to anyone through fear that he would be laughed at. Then he imagined that he had lumps on his forehead. In a frenzy of anxiety he asked his mother if she could feel the horns, and she, thinking it was part of some game, said, "Yes, I believe I do." The grown man still feels the pain of that experience.

Fear is a driving force in human conduct. It makes us do things; it keeps us from doing them. It protects from danger, and without a reasonable amount of fear mankind could not live. It is useless to talk about eradicating fear, but in training the child every effort should be made to see that fear does not become a curse instead of a means of protection.

Temper Tantrums

Almost invariably one learns that the temper tantrums manifested by children work out, either directly or indirectly, to their advantage, for the moment at least.

One small boy of 4 cleverly used this method to gain attention from the family whenever he felt slighted or left out. If corrected or if things did not suit him the response was immediate. First, Johnny would burst into tears; then would follow piercing screams; if this failed to bring results he would cast himself on the floor kicking and striking whatever came in his way. By this time the family, as a rule, relented, knowing what would follow. If, however, they held out Johnny was not discouraged. He had a final card to play. The kicking and screaming would stop; he would become rigid; because he held his breath he would begin to turn blue about the mouth. This was the end. He had brought them to his feet. Wet cloths were dashed in his face, and he was comforted and promised whatever he desired, however impossible. Having achieved his desires for the moment he would return to his own affairs. To

one who is not familiar with these outbursts this may sound exaggerated, but it is not. They are truly terrifying, and it requires a cool head and strong determination to hold out against a child under such conditions.

Once a definite stand is adopted it will not take the child long to see that his former methods of gaining his ends are no longer tolerated, that he is making no material gain and is losing approbation by his conduct. When once he senses this the temper tantrums will be discarded.

Many of these periodic and apparently unexplainable outbursts might be avoided if the parents would stop now and then and "take account of stock." Look into the child's general condition. Are there any evidences of nervous fatigue, such as twitching or jerking of the larger muscles or blinking of the eyes? Is he eating and sleeping well, and is his elimination good? What about school and playmates? Is he getting on well? Does he mix well with other children, or do they tease him; and if so, why? Does he play with older or younger children? Is he inclined to be a bully? Does he take his part in games? What are his duties outside of school? Is he being tutored to make a higher grade or to keep him in his class? Does he have too much to do—music and dancing lessons, which keep him from having sufficient outdoor exercise?

Find out what he is thinking about. What are his problems, hopes and disappointments? If he seems unhappy find the cause of his discontent. He may be jealous or troubled by some ill-defined fear, or worried by the problem of sex. He may feel inferior to others. Help him to see things clearly and in their true light. Appreciate the fact that the obligations of parenthood mean something more than to see that the child has enough to eat and wear and does not steal, lie, or set fires. The big task is to see that the boy or girl is happy and that he or she is learning how to meet the problems of everyday life successfully.

Dochez Scarlet Fever Antitoxin in Thirty-One Cases

R. H. Graham, Aurora, Ill. (Journal A. M. A., July 11, 1925), has observed thirty-one cases treated with unconcentrated scarlet fever serum by the Dochez method. In the thirty-one patients treated, twenty-one developed serum disease. These reactions ranged in severity from slight urticarial eruptions to a generalized edema, and the temperature as high as 105 F. Six of the cases showed anaphylaxis in the first hour. Eighteen cases either occurred or recurred from the second to the seventh day. Nine patients had an elevation of temperature from 100 to 105 F. Serum disease occurred in twenty-one cases out of a possible thirty-one. The size of the dose apparently did not influence the reaction. Immunization was established in twenty-four cases, all of those treated the day of exposure. Serum injected the second day after exposure did not protect two patients out of three. Therapeutic injections gave little apparent relief. One advanced case showed no improvement with 40 c.c. of unconcentrated serum, and there was a serious serum disease.

Significance of Hemoptysic Onset in Tuberculosis

Two hundred and forty-five, or 8 per cent., of the total number of patients admitted to the Trudeau Sanatorium during a period of

twelve years gave a history of hemoptysic onset, as reported by F. B. Trudeau, Saranac Lake, N. Y. (Journal A. M. A., June 13, 1925). The sputum was positive in 119, or 48.57 per cent., of these cases, while tubercle bacilli had been found in the sputum of thirty more patients reported, before they entered the institution. Counting in these thirty cases, 149, or 60.81 per cent., of the 245 cases had positive sputum. In 171, or 69.83 per cent., of this series of hemoptysic onset cases, a confirmatory diagnosis was made in the roentgen-ray laboratory. Rales usually moderately coarse in character, situated in the upper half of either chest, and not clearing after cough, were present in 196, or 80 per cent., of the cases of this series. Ten, or 4.08 per cent., had had at some time a pleurisy with effusion which could not be explained by any cause other than tuberculosis. In following these 245 patients from one to twelve years after leaving the sanatorium and classifying them under the headings of "well," meaning well and working for at least two years, "living" meaning either that they are still continuing their treatment or else that nothing more is known about them other than the fact that they are still living, "dead," and "unknown," it was learned that 114 are well; sixty-three are living; forty-seven are dead, and twenty-one were not heard from. The prognosis in this type of case is no better or worse than in any other mode of onset of this disease.

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A FURTHER STUDY OF THE POSSIBLE RELATIONSHIP OF THE MONILIA PSILOSIS TO SPRUE AND PERNICIOUS ANEMIA*, **

EDWARD JENNER WOOD, M.D., Wilmington, North Carolina

Last year with considerable trepidation before this section of the Medical Society of North Carolina I suggested the possibility of the relationship of sprue to pernicious anemia. Since that time there has appeared in the literature much which tends to lend encouragement to me in this belief. There are still those who see no ground for such a view; but when one begins the observation of the case at the inception and follows it through the many vicissitudes to its final termination the only difference will usually be one of the degree of the several symptoms, or the order of appearance of these symptoms, or the anatomical selection for the pathological changes. The cases of sprue without achylia gastrica gradually decrease as one begins the repeated fractional gastric analysis throughout the whole course of the disease. The lack of blood changes which some observers still record in sprue will also be eliminated if the period of observation is extended. Many have objected because of unfamiliarity with intestinal symptoms and even with sore mouth in pernicious anemia. Only a careful study of the case histories of past and present day literature is needed to settle this point. Two patients consulted me recently with the sole complaint of sore mouth and tongue but more particularly the latter. Many cases of pernicious anemia first come

under observation because of the annoying diarrhea.

C. Elders quite recently recorded his belief that there is a close relationship between pernicious anemia and sprue. He regards sprue as a deficiency disease and explains the great improvement following the dietetic regime in this way. Patients with pernicious anemia are equally improved in the same way. Even Manson-Bahr, who in the past has so finely differentiated sprue from pernicious anemia, now states that there is a close clinical resemblance of some cases of pernicious anemia to sprue, more especially at the outset.

One of the most vital contributions to this subject was recently made by L. W. Smith of the Harvard Medical School whose work was done in the Philippines. He found an anemia of extraordinary degree and concluded that it belonged in the group of aplastic anemia. His further study was shaped by finding incidentally a yeast in the tongue scrapings and in the feces of a case of sprue. The organism was isolated and subsequent study showed that it conformed to the *Monilia psilosis* (Ashford) morphologically, culturally and serologically. In a large series of controls this yeast was not found. This was the first instance of finding this organism in the Philippines. The *Monilia psilosis* (Ashford) is differentiated from the *Monilia albicans*, and the valuable point is noted that the latter can be administered in massive dosage to the laboratory animals without harm, while the *Monilia psilosis*

*Read before the Section on Medicine of the Medical Society of North Carolina in Pinehurst, April, 1924.

**Aided by a grant of the American Association for the Advancement of Science.

causes death even when the dose is small. This method had been resorted to in my laboratory from the very start in differentiating the pathogenic from the non-pathogenic yeasts. Invariably the *Monilia psilosis* inoculated intravenously in rabbits will cause death except in those cases in which the culture has been kept for many months in laboratory without animal passage.

An important contribution was made to this subject recently at Guy's Hospital. Hampson and Shackle in a study of megaloblastic and non-megaloblastic anemias included sprue in the megaloblastic group. In this work the average diameter of the red blood cell was placed at 7.23 microns. In the active stage of pernicious anemia the measurement reached the high point of 9.40 microns, while in sprue it reached 9 microns. The report shows that the measurement curve in sprue reached the same high point as in pernicious anemia. Even during the stage of remission the curve in sprue did not differ from the curve in pernicious anemia. These observations included one case of special interest in this place. The case presented blood changes, achylia gastrica, a history of diarrhea, buccal ulcers, weakness and wasting. At Guy's Hospital the diagnosis of pernicious anemia was made. The patient not being satisfied then went over to the London School of Tropical Medicine where the diagnosis of sprue was made. This, in a word, gives a bird's eye view of the whole situation.

During the past year in my laboratory the *Monilia psilosis* has been repeatedly grown from pyorrheal pus in pernicious anemia. It must be emphatically stated that this organism is not found every time, especially so when the patient is enjoying a remission. Ashford in his sprue work emphasized this point though not in connection with the pyorrheal source. It holds, however, for this source equally as much as for the others. In a number of cases of sprue, even cases from the East, it has been at times impossible to secure organisms for study. Occasionally a stray yeast

cell might be found but to secure colonies for study would be impossible. A large series of controls has been studied to determine whether or not the *Monilia psilosis* occurs in the mouth in the absence of any change other than pyorrhea. In all sorts of the most advanced types of pyorrhea, other than that of sprue and pernicious anemia, the effort to grow this yeast has been unavailing. It is conservative to say that the *Monilia psilosis* is not a normal inhabitant of the mouth or the intestinal tract, and in this confirmation is to be had in the work of Ashford in Porto Rico and of Smith in the Philippines. It remains to be seen what the significance of the finding of this yeast in the mouth or the intestinal tract without other signs really is. Rarely indeed does this happen. Such cases are now under observation and the vague symptoms of poor health of a very indefinite sort will be watched with keen interest and concern. If in time it is proven that there is an etiological connection between the *Monilia psilosis* and pernicious anemia it might well be prophesied that there will be a laboratory test of a valuable sort in the study of pyorrheal pus for the yeast in question, as the presence of such an organism will probably precede the appearance of the generally recognized changes of pernicious anemia by a period of sufficient length to permit of the institution of some real curative measure. It is to be hoped that in such cases the radical treatment of the gums may be instituted soon enough to avoid the later changes of pernicious anemia. Such an event would help to clarify the mystery of the disease which has baffled all the workers from Thomas Addison to the present day. As Christian has pointed out recently, to consider pernicious anemia only as a blood disease is absurd.

It is interesting at this time to note the title of a paper by H. Z. Giffin and C. F. Dixon of the Mayo Clinic to be presented at a forthcoming medical meeting in Washington: "Observations on pernicious anemia following ileostomy." We have heard that at this

clinic the disease is being treated through the ileostomy opening. Surely this must indicate one trend in the conception of the disease about which there is so little unanimity of opinion.

Much of the year since the session of this Society in Raleigh has been spent in the complement fixation in sprue and pernicious anemia. The technique originally suggested by Carl Michel in Porto Rico and so successfully employed by L. W. Smith in the Philippines is being used. In this plan the antigen is the *Monilia psilosis* (Ashford) which is autolyzed. A subsequent paper will deal with the details of this work, but suffice it to mention in this place a few of the results up to this time. In a definite pernicious anemia which had been followed for about eighteen months and in which a satisfactory culture of the yeast had never been secured the serum gave a positive response which should be classified as four plus. Another case which had been under observation for several years presented a clinical picture which could fit satisfactorily only in the classification of sprue. At the time of observation there was a remission. The response was a positive classified as two plus. In another case in which a yeast closely simulating morphologically and culturally the *Monilia psilosis* (Ashford) was found, the serological response was negative. Further study of this yeast by intravenous inoculation in a rabbit showed it to be a non-pathogen. This would indicate that it was not the *Monilia psilosis* (Ashford) and a positive result should not have occurred. In this part of the work there have been surprises in finding unexpected positives when seeking mere normal controls. In such cases further investigation from this new standpoint has brought forth clinical evidence at least justifying a prolonged observation of the case in question. In all this complement fixation work Miss Liles, technician in the clinical laboratory of the James Walker Memorial Hospital to whom I am indebted for this part of the work, used the same antigen made from the *Monilia psilosis* (Ashford) obtained from the

pyorrheal pus of a known case of pernicious anemia. In this case the same organism was obtained also from the gastric contents and the feces.

Smith in the Philippines using the technique of Michel and Martinez in Porto Rico in six cases of sprue got a definitely positive response and negative response in over ten controls. This work was further controlled with an antigen of the *Monilia albicans*. Smith states that the value of the complement fixation reaction in the diagnosis of obscure intestinal disturbances simulating dysentery and sprue should be of inestimable value from the point of view of the therapist as it offers apparently a truly specific means of diagnosing this relatively large group of cases.

The study of the yeasts of the whole monilia group has been made necessary through the fact that morphologically there is only very slight difference between the various members of the group. The *Monilia psilosis* (Ashford) falls in that group which produces gas in cultures containing maltose, dextrose and levulose, but there are numerous other yeasts doing likewise which are non-pathogens or at least are not the *Monilia psilosis* (Ashford). Before this present work can be carried to a satisfactory conclusion it becomes necessary to determine all of the yeasts of the intestinal tract beginning with the mouth and the gums down through the various divisions of the tract. After this is done these many organisms must be divided into pathogens and non-pathogens. It will be seen that this requires inoculations for every organism studied. But even after an organism is found to be a non-pathogen it cannot be discarded for it will be met with again and points of definite distinction must be sought.

The confusion which has existed for years regarding the differentiation of the *Monilia albicans* and the *Monilia psilosis* is reasonable and apparently unavoidable. It is to be hoped that sufficient progress has been made to affect this point and that some satisfactory means may be soon forthcoming. Cul-

turally the differentiation cannot be satisfactorily made by the average worker. My own plan is to subject every culture to inoculation intravenously in the rabbit. As stated above the animal stands the *Monilia albicans* even in large dose, a point stressed by L. W. Smith, while the *Monilia psilosis* (Ashford) produces a rapidly fatal septicemia.

When it is considered that the yeast being studied has a diameter of from two to seven microns it can be appreciated that going over with it, attached to its surface, may be many bacteria of many sorts. Some of these bacteria may be, and likely are, fermenters of various sugars. Turbidity also may be produced by such contaminating organisms. Therefore it is readily understood that bacteria may, and likely do, account for some of the cultural returns which are inaccurately attributed to the yeasts. To secure a bacteria-free culture in my hands has been most difficult. Great dilution and much shaking have failed. Plates inoculated with such material show just what can and so often does happen. Not only may colonies of many different bacteria be found but also more than the one yeast being studied. Another source of possible error which has impressed me is the purity of the sugars used for the fermentation determinations. The sugars supplied in this country by the Digestive Ferments Company in Detroit probably are better for such work than the products obtainable in the past. Certainly my experience justifies me in this opinion. In looking over the price lists of the sugars used by the European mycologists one cannot but be impressed with the great difference in price. It may be that if the purest American sugars, regardless of their greater costliness, were employed the fermentation results would be less confusing. Assuming such a possibility I have ordered

from London a lot of the same sugars used by Professor Castellani and expect to make comparative studies. These two procedures added to the aid given by the complement fixation work are hoped to make a better basis for a revised classification.

Right now much of my time is being devoted to attempts at the immunization of sheep. One procedure consists in the intravenous inoculation of gradually increasing amounts of a Berkefeld filtrate of the *Monilia psilosis* (Ashford) grown in dextrose peptone water. The assumption on which this is done is that the organism in question produces a soluble toxin. The first returns from this work were disappointing but further study indicates the possibility of the serum of the sheep so treated containing antitoxic properties. The second procedure consists in the intravenous inoculation of the sheep with gradually increasing amounts of the killed *Monilia psilosis* (Ashford.) The final test consisted in inoculating the two sheep with a living culture of the *Monilia psilosis* (Ashford) the virulence of which had been greatly enhanced by repeated animal passage. The sheep treated in the latter way died very promptly. The sheep treated with the filtrate was made sick but lived for days and was finally killed. It seemed reasonable to believe that if the filtrate plan had been carried further the animal would have been able to withstand the infection successfully. This work will be repeated profiting by the error of the past experiment.

An apology is due for consuming the time of the Section with a presentation merely of problems, difficulties and failures. It is done merely to save some other worker from costly error and in the hope of valuable criticism which has proven of such great help to me in the past.

A DISCUSSION OF EXTRAVASATION OF URINE*

Case Reports

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This subject is being presented for your consideration, first, because of the difficulty in differentiating extravasation from other inflammatory conditions occurring in and around the external genitalia and perineum; secondly, because of the rapid and extensive destruction of the tissues involved, should they survive the acute infection; thirdly, because of the persistence of urinary fistulae in many cases and especially those not properly treated in the acute stage; and fourthly, because of the high mortality in neglected cases.

Rupture of the urethra followed by extravasation of urine due to direct violence cannot be avoided.

Rupture of the urethra due to neglected or maltreated stricture can be avoided in a large majority of the cases. It is to this type of cases that we wish especially to direct your attention. Such cases of extravasation may be placed in two groups,—

1. Extravasation following perforation of the urethra in the course of treatment of urethral stricture.

2. Extravasation following perforation due to infection and ulceration posterior to a stricture.

Most perforations take place in the vicinity of the membranous urethra and in order to clearly understand just what takes place in the extravasation at this point it is necessary to state briefly a few anatomical facts.

The structures of importance are (1) the superficial perineal fascia; (2) the triangular ligament.

The superficial layer of the perineal fascia is attached laterally to the pubic arch, posteriorly to the triangular ligament, and anteriorly it is continuous with the dartos tunic, the fascia of the penis, and Scarpa's fascia upon the abdominal wall.

The triangular ligament is attached laterally to the pubic arch. Its base is directed toward the rectum and is attached to the central tendinous point of the perineum, and the apex is directed forward. The membranous urethra lies between the layers of the triangular ligament.

The superficial layer of the perineal fascia and the triangular ligament divide the perineum into two distinct compartments, and these compartments are of great importance in directing the course of urine following extravasation.

When the urethral perforation is anterior to the anterior layer of the triangular ligament, the process usually extends forward into the scrotum and penis, and then spreads over the symphysis and lower abdomen.

When the urethral perforation is between the layers of the triangular ligament, the process spreads toward the perineum and may rupture through it.

When the urethral perforation is posterior to the posterior layer of the triangular ligament, extension is toward the rectum, pelvis, space of Retzius or the peritoneum may be perforated.

Extravasation due to improper instrumentation usually occurs in the vicinity of the membranous urethra. Strictures are most commonly found here because the membranous urethra is the narrowest part of the urethra, is well fixed by the triangular ligament, and consequently, it is the least flexible. The sharp curve of the urethra forward at this point also renders perforation more likely.

Patients with this type of extravasation usually give a history of having had a complete or partial retention of urine; they consult their physician, who, in his zeal and earnestness to give relief, attempts to pass a catheter or sound, uses a little too much force and perforates the urethra. Such a patient in a few hours develops what is commonly

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called "urethral chill," which is followed with constant, urgent, painful, and futile efforts to urinate. The urine instead of passing out through the urethra is forced into the surrounding tissues through the perforation. Such a patient will show an elevated temperature and rapid pulse. On examination there will be found a tenderness and bulging in the perineum or scrotum and rectal examination will show an area of fullness that can be palpated and the tissues will appear edematous. Unless the condition is treated properly and immediately, it invariably pursues the following course: The process is at first localized between the layers of the triangular ligament, but, as it proceeds, it infiltrates toward the perineum and may extend as far as the tuberosity of the ischium or break through the anterior layer of the triangular ligament and spread into the scrotum, cavernosa, or anterior abdominal wall. Gangrene appears in the deep and superficial structures and is followed by extensive sloughing.

If extravasation is anterior to the triangular ligament the process spreads more rapidly. Radical treatment is necessary at the earliest possible moment. It consists of multiple incisions throughout the infected area and bladder drainage either suprapubically or perineally. If it is possible at the time, the stricture area should be excised and a catheter placed through the urethra into the bladder to secure drainage in this way. The post operative treatment is important and consists in gradual dilatation.

To illustrate this type of case, we are reporting one that was recently treated by us.

C. W. H. Case Record No. 13900. Single. Age 20.

Patient came to us complaining of pain in the perineum, scrotum, partial retention of urine, and hematuria. This patient had recently had sounds passed. This was accompanied by severe pain in his urethra, bleeding, and more difficulty in passing his urine. There was a history of gonorrhea in 1920 and following this there was a gradual reduction in the size of the urinary stream until several weeks ago when complete retention developed. His first instrumentation was successful, but the second time instrumentation was attempted the urethra

was unquestionably ruptured. In a few days' time the patient developed chills and fever and great pain in his perineum. Examination revealed a swelling in the perineum and scrotum, which was extremely tender. In a short time sloughing started in the scrotum and was proceeding rapidly until the patient was given ether anesthesia, the infected areas thoroughly drained, and a catheter placed in the bladder in order to secure permanent drainage. This patient made a complete and uneventful recovery.

In this type of cases one should be exceedingly careful not to force an instrument, but to resort to the use of filiform and follower. After slowly and carefully manipulating the filiform it is seldom that one fails to pass it into the bladder and then he is master of the situation. Followers can be attached to this and inserted into the bladder without producing trauma or causing undue pain.

Extravasation following perforation due to infection or ulceration posterior to a stricture is probably the most common type. It has been called "spontaneous extravasation." The infection and ulceration is usually immediately posterior to a stricture. The strength of the urethral wall is diminished by its diseased condition and under the increased intra-urethral pressure brought about by continued straining in an effort to empty the bladder in the presence of a urinary obstruction, there occurs a bulging of the urethral mucosa through the muscular wall. This is followed by abscess formation which later ruptures and causes an extravasation of urine into the surrounding tissues. This abscess may rupture immediately or it may remain latent or quiescent until the patient makes an unusual physical effort causing rupture. Another possibility is that the ulcerated mucosa ruptures without abscess formation, and extravasation takes place. This form of extravasation is by far the most dangerous, because the urine is always "septic" and the infection spreads rapidly.

On account of the fact that the extravasated urine is infectious and the resulting suppuration destroys anatomical barriers, extravasation in this group is not confined or limited to the different places described by the anatomist. Quite often the cellular tissues on the thigh

and buttocks are involved in the process. After the septic urine penetrates the tissues the patient develops chills and fever and unless some radical treatment is instituted immediately the extravasation extends very rapidly into the scrotum, thigh and abdominal wall, and gangrene starts. When once it starts, it means death to the tissues and often to the patient. According to one authority a black patch on the glans penis is a fatal sign.

To illustrate this type of cases we are reporting one which has recently come under our care.

J. D. F. Case Record No. 14118. Single. Age 50. Male.

This patient came in complaining of pain and swelling in the perineum and inability to empty the bladder. There was nothing of interest in his family history or past history, with the exception of the fact that four years ago he had an attack of enteric fever and since then he has had difficulty at times in voiding. Recently, he was put in a hospital suffering with complete retention of urine, chills and fever. A few days ago he came to see us with the same symptoms.

General examination was negative. Local examination showed an oblong swelling in the perineal region along the median raphe extending from the anus upward under the scrotum. This mass was hard, indurated, definitely inflammatory and extremely painful. Rectal examination showed a definite dome-like mass extending up above the prostate and vesical neck. The mass, as felt per rectum, was about the size of a turkey egg. Bladder was catheterized and about eight ounces of "septic" urine was withdrawn. White blood count was 16,250 with 85 per cent polys.

A definite diagnosis of peri-urethral abscess with urinary extravasation was made.

Under novocaine anesthesia the abscess was opened and about 6 ounces of pus evacuated. There was a dense infiltration in the perineum and a definite tract was found leading to the prostatic urethra. Patient did not improve very rapidly and five days later was given ether anesthesia and the infected area thoroughly drained. Infection was found extending up and around the vesical neck and was working its way to the space of Retzius. A catheter was placed in the bladder to assure drainage. This patient is now doing nicely, the infected area is draining and the patient's general condition is much improved.

The treatment in these cases consists of early and thorough drainage of the infected area by deep, multiple incisions, and bladder drainage, perineally or suprapubically.

Summary

Pain in the region of the perineum or scrotum, associated with chills, fever

and shock, with a past history of partial or complete urinary retention, should call for an examination in the most careful and searching manner, because of the fact that the premonitory symptoms of extravasation are somewhat confusing and may be due to a variety of causes. Fever, chills and other septic symptoms may be due to a deep peri-urethral abscess, prostatic abscess, seminal vesiculitis or an ascending urinary infection.

Early diagnosis and the prevention of extravasation of urine by careful management of patients suffering with urethral stricture are the two most important factors.

After the condition occurs, any treatment to avail must be a radical surgical procedure with two objects in view;—one, to drain the bladder either perineally or suprapubically; the other, to thoroughly and freely drain the inflamed areas by means of long and deep incisions.

In passing instruments on a patient have a past history of complete or partial retention of urine, great care should be taken not to force the instrument but to let it fall in mainly by its own weight. Where the obstruction is at all pronounced, it is best to use a filiform which can be attached to a No. 7, 9, or 11 sound. Thus the patient is given relief safely.

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DIETETIC TREATMENT OF THE DECOMPENSATED HEART

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The diet which I shall commend to your attention for the insufficient heart is the more or less familiar one consisting of (1) lean proteins, (2) low carbohydrate vegetables and fruits, (3) little or no breads, (4) little or no salt, (5) little or no water.

As well as I can find out this diet first demonstrated its efficacy in this country in the hands of a non-medical man of foreign birth, who has had an almost nation-wide following for fifteen or more years. He does not understand the rationale of it himself and has always made statements about foods that might well emanate from the old time mid-wife:—such statements as that starchy foods do for the arteries what laundry starch does for a shirt bosom and that starches clog the capillaries with ooze, slime and mucus. I suspect that he picked up the diet at a European resort. However, we know that digitalis and other invaluable remedies found their way into the pharmacopeia after being first exploited by untutored herb doctors and Lydia Pinkham's in the rural districts and we must take our practical pointers where we find them.

Frederick Allen has touched upon this line of dietetics in heart and artery cases and I expect his new book to have more to say for it. Several of my medical friends and I have made use of it for ten or more years with great satisfaction and I doubt not that many others have also.

This type of diet for the insufficient heart is not only well borne and supporting; it is in some respects curative. I shall endeavor to review some of the qualities that render it so helpful. First: It makes for a comfortable gas-free abdomen. Lean meats and green vegetables digest rapidly and without fermentation. The digestive organs do not distend with gas and elevate the diaphragm with the effect of displacing

and embarrassing the disabled heart. Second: The abundance of easily assimilated protein in the ration favors heart muscle recovery. Third: The diet is bulky and filling and it has a large residue of cellulose for promoting peristalsis. Fourth: It is weight reducing. A pound a day of weight reduction is not unusual in the overweight patient. This is in itself salutary. Not only does a reduction of 25 to 75 pounds spare the heart in walking and all muscular activity but there is this further consideration: Each cubic inch of adipose tissue that is added to a man must be given its quota of capillaries. In terms of yards or miles of capillaries for a corpulent person, the figures would be impressive. With the burning of the fat there is atrophy and disappearance of these vessels and curtailing of what has been called the capillary bed. Unnecessary fat is a source of toxins of suboxidation. Fat reduction greatly helps to restore the myocardial balance, and the kidneys and liver are relieved of the tremendous strain that the metabolism of this fat has imposed upon them. Fifth: It is an alkaline or base-forming diet. True, the lean meats are acid forming, though less so than sea foods; but they are much more than offset by the base-forming green vegetables and citrus fruits. While leg of pork has an acid percentage of 5.5 and leg of mutton of 3.5, spinach has an alkaline percent of 113, cucumbers 45.5, tomatoes 24.5, lemons of 12 and oranges of 14.4. Fisher writes: "Fatigue is the result of chemical changes which give rise to toxic products. The constitution of the blood is altered by the absorption of these acid products of fatigue in consequence of which its alkalinity is greatly diminished, a condition which results in serious disorders." Neutralization of fatigue acid in heart muscle and the restoration of its freshness and tone are enhanced by a rich

base-forming diet. Sherman, chief chemist of Columbia University, says: "It should be clearly understood that excesses of base-forming elements in the food are not in any sense objectionable. They do not disturb neutrality but rather act as reserve material for its maintenance." Sixth: It is a regime which reduces the blood volume. This is due to the absence of sodium chloride and the reduction of the water intake to the minimum consistent with comfort. Sodium chloride taken with foods and stored in the tissues attracts and holds there a definite proportion of water. Water imbibed at short intervals increases the blood volume by that much while in transit. In the frequently encountered heart patient whose kidneys are defective and eliminate fluids poorly, restriction of water takes on added importance. With lessened blood volume there is less distention of the heart chambers and less load. Seventh: The absence of fats and of sugar and all high carbohydrates from the diet spares the depressed liver function and enables it to catch up and do its work with relative ease.

No differentiation of heart conditions is made in connection with this diet. In decompensated hearts from whatever first causes, restoration of the myocardium is the essential thing and the only object toward which we can direct treatment.

In the case of an accompanying interstitial type of mixed type of nephritis where there is nitrogen retention the protein intake should be decreased. In the event of uremia the patient should be put on the juice of one orange every hour, or, as Mosenthal recommends, 240 gm. cane sugar and 6 lemons in a quart of water per day, amounting to approximately 1000 calories. This ration may be continued for three or four days which is long enough for the uremia to subside or to terminate fatally. At the expiration of this time, for the replacement of waste in the heart muscle, the diet should be increased to include $2/3$ gm. of protein per small kilo of body weight.

Lean meats afford the most easily available protein. Modern food chemistry has demonstrated that the so-called red meats contain less purin bases than the white meat of fowl and fish. Discrimination against red meats and in favor of white meats, based on old uric acid considerations, is obsolete.

In household parlance this diet may be stated as follows, at each meal:

Take 3 ounces of lean meat.

Take two tablespoonfuls each of three of the following vegetables: lettuce, tomato, cucumber, radish, spinach, asparagus, rhubarb, beet, turnip, mustard, dandelion greens, Swiss chard, celery, Brussels sprouts, water cress, kale, okra, cauliflower, eggplant, mushrooms, raw cabbage, string beans, beets, onions, squash, carrots and oyster plant.

Take a raw vegetable salad that would make 3 tablespoonfuls of chopped vegetables, upon or with lettuce.

May have for dessert at lunch and dinner $1/3$ grapefruit, sliced orange, a little fruit gelatin, lemon or orange sherbet or a small apple. A small cup of black coffee at breakfast, unsweetened.

Do not use salt in your food. Use no sugar and no salad oil. Use lemon for flavoring.

Take the juice of six lemons per day.

Drink only enough water to satisfy actual thirst.

Reduced to grams and calories the diet for a patient weighing 176 pounds or more (and most of our myocardiac cases are in this class) will appear as below:

Lean Meat—Grams at each meal, 100; grams for the day, 300; grams of protein, 80; grams of fat, 50; calories, 770.

Green Vegetables (5 and 10 per cent)—Grams at each meal, 450; grams for the day, 1350; grams of carbohydrate, 67.5; grams of protein, 22.5; calories, 360.

Lemons—Grams for the day, 300; grams of carbohydrates, 12; calories, 50.

Orange, or similar dessert—Grams at each meal, 100; grams for the day, 300; grams of carbohydrate, 40; grams of protein, 8; grams of fat, 2; calories, 210.

Total calories, 1390.

The minimum requirement for an ambulant patient of 80 small kilos or

176 pounds at 30 calories per kilo is 2400 calories. The table above with but 1390 calories leaves a calorie deficit of 1010, insuring reduction of weight yet amply providing for the protein balance.

A brief case history will illustrate the results that can quite generally be accomplished by the use of this dietetic method to relieve a distressed heart.

Mrs. M., 45, nullipara, was admitted to the Sanitarium one year ago, giving the following:

Complaint:—Severe dyspnea; precordial pain, extending down the left arm; edema of legs and feet; cough; weakness.

Family history:—Negative for cardio-renal disease.

Past History:—Herpes zoster 6 or 8 years ago, since when has not felt so well. Blood pressure of 200 mm. discovered 2 years ago. Occasional arthritis in knees. Maximum weight 250 pounds one year ago. She has reduced her weight 32 pounds during the past year by dieting.

Present illness:—Eighteen months ago noticed swelling of ankles and feet; much worse last ten days. Ten months ago began having shortness of breath and for the last two months has been able to lie down but very little; severe cough for one month. Three months ago became very weak. Two months ago began having soreness and burning in the region of her heart and paroxysms of pressure and pain in her chest which extended down the left arm.

Physical examination:—The patient was well developed and much overweight. Her height was 5 feet, 5 1-2 inches and her weight index for her age was 218/146, an excess of 72 pounds. She was pale and somewhat cyanotic; breathing labored upon exertion or lying; eyes, hands and legs to the knees were edematous; tonsils were passed and teeth and gums were negative; pulse 100, of good volume and rhythm but resistant to compression; arteries smooth, straight and only moderately palpable; blood pressure 214-144; heart apex percussed in the 5th space, 12.3 mm. to

the left of the mid-line, right border 7 cm. from the mid-line, width of aortic arch 8 cm. The mitral and pulmonary sounds were not markedly altered; the aortic was accentuated; lungs revealed a few bronchial rales only; the liver edge was smooth and swollen 3 to 5 cm. below the rib margin; epigastric tenderness marked; the neurological examination was negative.

Roentgenogram of chest:—The heart was markedly enlarged, particularly to the right; the outline was well rounded. The aortic arch was widened. M.L. 12.3 cm.; M.R. 6.9 cm.; L. D. 19.3 cm.; T. D. 12 cm.; Arch. 8.3 cm.

Urine: gravity 1.010; albumin present; otherwise negative; another specimen, 1.012, albumin negative, a few hyaline and granular casts. The two hour 'thalein output was 45. Red cells 3,600,000; hemoglobin 55.

Diagnosis:—Dilated and decompensated heart, aortitis with angina, passive congestion of the liver, mixed nephritis, arterial hypertension, secondary anemia.

Therapy:—Heart diet, rest, fomentations to the abdomen. As the heart gained in strength, light sweating baths daily followed by neutral tub for lowering the blood pressure. As there was no arrhythmia of the heart, digitalization was not undertaken but the tonic dose of 30 minims per day was given.

Result:—Relief in five weeks of dyspnea, angina and edema. Reduction of blood pressure from 214-144 to 180-108 and of weight from 218 to 186, or 32 pounds. The patient continued the diet at home, was without symptoms for a year and reduced her weight 14 pounds more.

Summary:—The dietetic regime here outlined deserves the place of first importance in the treatment of failing myocardium. It rebuilds the myocardium while lightening the load of avoirdupois and of excess fat metabolism, which are usually prominent factors in the heart case.

It is not contraindicated in any but the most extreme nephritic states in which exogenous protein may need to

be withheld for a time.

In the undernourished thyroid, rheumatic or other heart patient, it will

greatly help with establishing compensation after which additional calories may be given.

EARLY CLINICAL OBSERVATIONS WITH THE WATER-COOLED COOLIDGE TUBE*

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The history of x-rays in the treatment of disease is comparatively recent and need not be recalled to your minds. The splendid results accomplished with x-rays in the treatment of the many skin diseases is familiar to all of us particularly the percentage of cures in skin cancer. In perfecting such a technique as has made this showing possible the radiologist has encountered numerous obstacles. Physical laws of x-rays and their behavior, skin tolerance, individual susceptibility, latent reactions, dosage, etc., are questions which have been dealt with more or less satisfactorily until a period has now been reached where a fair degree of confidence exists amongst radiologists as regards superficial therapy. These therapy factors, six in number, are, milliamperage, voltage, skin target distance, filtration, port of entry and time. These factors have come to mean something very definite and, with the individual equation which enters into the proper management of every case, the radiologist can feel pretty sure of his treatment, and can say to the patient conservatively just what to expect in the way of a cure.

Following in the wake of superficial therapy the treatment of disease conditions beneath the skin surface came rather suddenly into prominence. The application of short wave length x-ray currents with a high voltage to deep seated disease gives effective deep therapy.

With the advent of deep therapy radiation great optimism for the cure of

cancer was felt by many radiologists, but this hopeful spirit was somewhat checked after two or three years of experience and observation. The mortality stayed high and perhaps had risen. It was true then and is true today that a very large majority of cancer patients went on and died; however, we feel that deep therapy prolonged life and alleviated pain. These are worthy accomplishments. It is also a pertinent fact that the majority of cancer case coming to the radiologist have had surgical treatment.

By utilizing the knowledge gained from experience with superficial therapy we are able to deliver a larger percentage of rays into the deeper structures of the body without so much danger of injury to the skin as formerly. This in turn has brought about certain changes in the deeper structures and with this have come many new problems for the radiologist to solve.

In delivering depth doses to a growth serious injury may be done to intervening tissue cells. The reaction is very different from the superficial because of the necessary longer exposures and higher milliamperage. Under these conditions the blood stream as well as other body fluids suffer. The body chemistry is altered producing a marked reaction often on the part of the patient as well as reaction in the diseased area itself. We must keep in our minds therefore the possible damage to normal cells when delivering lethal doses of x-rays into diseased areas. The physiology of our patient should first be conserved because we know that nature is putting up a fight against the invading host. We surely defeat our purposes

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es when we think only of killing every cancer cell and leave out of account the normal physiology of the patient. The ideal is to deliver just enough x-ray to retard the growth and to at the same time stimulate the adjacent cells to join in with the general protecting agencies of the human body. This observation is particularly true if we are to believe cancer not to be, in its inception, the purely local disease that pathologists and other investigators have claimed it to be. Deep seated cancer tumors have been made to disappear with x-ray doses not lethal in amount; this would lead us to think that the x-rays do something to the normal or to the diseased cells, or probably to both, which produces chemical changes unfavorable to the further development of the cancer.

The behavior of the blood platelets after deep therapy radiation would seem to bear out the idea that there is a defensive mechanism in the blood stream against cancer. If this be true every case of cancer should be given the Ultra-Violet light rays both before and after deep therapy. We have much evidence of a local and general defensive mechanism against cancer. This defense may be hereditary or acquired. Clinically and experimentally this acquired defense, as we are now able to produce it by radiation, appears to be more or less temporary. How it is developed we do not know. But it is a probable factor of importance in the radiation treatment of cancer.

With the prevalence of a dread disease like cancer I am sure we should all approach these unfortunate people with open minds, ready to accept the best available method or methods; and particularly is it desirable for the internal man, the surgeon and the radiologist to work together. I feel confident that there is a definite place for deep therapy in the successful treatment of malig-

nant disease, that there are many cases in which x-ray treatment is to be preferred over surgery, and that many cases will respond most satisfactorily to the combination of surgery and deep therapy.

The technic used by me was developed coincidentally by the educational department of Victor X-Ray Corporation in collaboration with Dr. Case of the Battle Creek Sanatorium, and Dr. Schrinier of the New York State institute for cancer research. This is as follows:—200 K.V., 50 cm. distance, 30 M.A., 1 mm. of copper and one of aluminum with a total minimum dosage of 500 M.A.M. to equal 100 units. With this technic the dosage in the following diseases are given as follows: Sarcoma 50 to 70—osteo and periosteal sarcoma 100-125, epithelioma 110-125. Leukemias are given six or eight treatments over ten to thirty days periods, 50-70 units; fibroids 40; carcinoma of abdomen 60-90, of chest 65-90, of head 90-100, of extremities 110 and of glands 40. The time factor is arrived at by using a modified dessauer method charting out the pathology.

Details of treatment necessitate attention to:

1. History of case;
2. Physiology of patient,—conserve normal cells; avoid vascular areas if possible; bear in mind restricted ports of entry; make preliminary x-ray examination of chest, bone and genito-urinary tract.
3. Careful measurements and charting out pathology;
4. Estimation of time factor,—treatment time reduced six times with 30 M. A. technic;
5. Post radiation observations;
6. Neutral or basic dietary; and
7. Ultra violet light before and after.

LIVER FUNCTION STUDIES IN A CASE OF BANTI'S DISEASE

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The relative infrequency of Banti's Disease and our ignorance of its etiology justify thorough study of those cases in which such a diagnosis has been made and corroborated. The case herein reported was observed over a period of five years, from the onset of his symptoms until his death. During the last few months certain hepatic efficiency tests were performed. Our inadequate knowledge of the functions of the spleen or of its influence upon the liver or indeed of the true significance of tests for hepatic function precludes any attempt to interpret the observations in terms of the findings at autopsy.

Mr. H. was first seen October 30th, 1920. His illness had commenced rather suddenly in May, 1917, when, while walking he had suddenly experienced pronounced abdominal discomfort not amounting to acute pain, followed in a few hours by abdominal distention with considerable general prostration. The prostration persisted in lessened degree but the abdomen continued to increase in size. There were no other gastrointestinal symptoms. At the end of three weeks the fluid accumulation had become so pronounced that abdominal paracentesis became necessary. The patient was operated upon by Dr. J. S. Horsley, a Talma operation being performed for permanent drainage. The peritoneum was incised and the omentum sewed into the abdominal wall. At operation the liver was found distinctly enlarged. The condition of the spleen was not described. The abdomen was tapped once after the operation before discharge from hospital.

Following this the patient described some fluctuation in size of the abdomen, sometimes greater and sometimes less but always apparently with some degree of fluid. No further tapping however was necessary until November, 1920, somewhat over three years from the date of operation. Beginning in

July, 1920, a steady gradual increase in fluid had been noted. There was no pain at any time and the patient suffered no other symptoms.

When seen in October, 1920, he was distinctly emaciated, the skin was of a lemon-yellow tinge and the musculature was soft. A diagnosis of Pick's Disease was made on the basis of the following findings:

(1) The heart appeared somewhat enlarged to the left, the left border of dullness being percussed fourteen centimeters from the midline in the fifth interspace. The right border was three centimeters from the midline in the fourth intercostal space. The heart borders moved but slightly with change of position from right to left. The apex impulse was diffuse and of walking-beam type with expansion in the nipple line in the fifth interspace and synchronous retraction in the fourth.

(2) Passive motion of the arm was accompanied by a crackling sound under the upper sternum, heard on auscultation.

(3) The abdomen was moderately distended with fluid, with shifting dullness and fluctuation easily elicited.

(4) The liver was not felt and the area of liver dullness was distinctly reduced.

(5) The spleen was enlarged, smooth and not tender. The lower edge extended ten centimeters below the costal margin in the midclavicular line. The mesial border reached to within three centimeters of the midline, the splenic notches being easily palpated.

The examination was otherwise essentially negative. Blood pressure was 120 systolic and 60 diastolic in both arms. There was no inequality of the pupils nor variation in pupillary reaction suggestive of mediastinal pressure.

At this time the blood picture showed a moderate secondary anemia with 75 per cent hemoglobin, 3,608,000 red cells,

4,000 white cells and an essentially normal differential count. Slight poikilocytosis and anisocytosis were observed. Also there was slight achromia. No nucleated red cells were found. The blood Wassermann was negative.

The urine was of rather high specific gravity (1030) and a distinct trace of albumin was found. The sediment was negative. On subsequent examinations the specific gravity of the urine varied from 1019 to 1027. Phenolsulphonethalein excretion in two hours was 65 per cent. Feces examination for occult blood was negative.

Subsequent to this examination the patient retrogressed rather rapidly and by November 9th, 1920, his hemoglobin had been reduced to 40 per cent, red count 2,500,000, white count 3,000. He was tapped at this time, the first paracentesis in over three years.

Between this date and his death on June 10th, 1922, the patient had twenty-four tapplings at intervals of from two weeks to nine months. His general health gradually declined so that by November, 1921, he suffered continuously from dependant edema and found difficulty in climbing stairs without aid. Little change occurred in the blood picture.

On June 10th, 1922, while on a picnic, the patient suddenly became extremely ill, vomited quantities of blood, was brought to the hospital in collapse, continued to vomit fresh blood and died within a few hours.

Clinical evidence corroborative of a diagnosis of Pick's Disease had been found in the fluoroscopic examination of the chest. Although the heart shadow was not particularly enlarged, there was a prominent point two-thirds up the left convexity of the shadow. On deep inspiration the shadow of the left bronchial tree appeared to be pulled downward toward the heart at this point, giving the impression of pleuro-pericardial adhesions. The same distortion of the bronchial shadow on inspiration did not appear on the right. The posterior mediastinum as seen on oblique illumination appeared clear.

At autopsy the following pertinent observations were made:

The body was very pale. On opening the abdomen about 6 liters of clear straw-colored fluid were found in the peritoneal cavity. A portion of the omentum, the tranverse colon, the tip of the appendix and one loop of small intestine were adherent to the old operative scar near the lower midline. There was no extensive vascularization in this region.

The stomach was dilated to the size of a small football, and full of bloody fluid, almost pure blood. Examination of the mucous membrane of the stomach showed no varicosities, no lesions of the mucosa sufficient to account for the bleeding. The pylorus and duodenum were similarly examined, externally and internally, and were found to be negative. The remainder of the small intestines and colon were negative to inspection and to palpation. They were not removed for examination.

The appendix was 7 inches long, and was twisted between two loops of small intestine, the tip being adherent to the operative scar. A pronounced Lane band was present.

The liver was about one-half normal size, measuring 20 cm. x 13 cm. x 7 cm. after removal from the body. It was milk-chocolate brown in color, and the surface was irregular, with many hazy patches suggesting an early "hobnailed" type of liver. On section it had a fibrous feel and the interstitial tissue throughout the liver was obviously increased.

The spleen measured 23 cm. x 15 cm. x 8 cm. The surface was slate-blue in color. The cut surface showed a reddish-blue color, with some increase in fibrous tissue. The Malpighian bodies could be recognized.

The kidneys appeared normal. The renal capsules stripped easily. On section there was normal differentiation between cortex and medulla, negative. There were no adhesions except for one slight band extending about 2 1-2 inches down from the left hilus and on to the pericardium. The

pericardium contained about 10 cc. of clear yellow fluid. There were no pericardial adhesions. The heart was the size of the cadaver's right fist, and was negative in all respects. All the valves were normal. The mitral valve admitted two fingers, and the tricuspid, three. The aorta was normal. No masses could be felt in the mediastinum, no enlarged glands.

The esophagus was opened. At the lower end there was a circle of petechiae, and one large varicose vein was recognized. A distinctly ruptured vein was not found.

Pathological Diagnosis:

1. Atrophic cirrhosis of liver
2. Hypertrophy of spleen
3. Ascites
4. Esophageal varices
5. Banti's Disease

Specimens were removed from the liver, spleen and adrenals for microscopic examination, and submitted to Dr. A. C. Broders of the Mayo Clinic, who reported: "The spleen shows the usual picture of Banti's disease, with marked fibrosis, destruction of splenic pulp and multiple hemorrhagic areas. The liver shows only a mild degree of cirrhosis, which is rather unusual considering the marked fibrosis of the spleen. As far as I can see, the adrenal shows very little pathology with the exception of a slight inflammation."

It is interesting to note that the roentgen finding suggestive of pleuropericardial adhesions was satisfactorily accounted for at necropsy. The initial physical findings suggesting Pick's Disease were due to misplacement of the heart from abdominal distention, which was never completely relieved.

As is often the case in Banti's disease no clear-cut etiologic factor could be traced. There is no history of tuberculosis in the family. The patient's blood Wassermann was negative. He had had an acute Neisser infection one year prior to the onset of his illness. In 1915, two years before onset he had once drunk one-half pint of whisky on a bet and had been sick for one week thereafter. Beyond this one occasion

the patient had always been a total abstainer.

Hepatic Function Tests

In view of the marked atrophic cirrhosis of the liver certain tests of liver function were performed.

Goodpasture described, several years ago, a qualitative test which appears to be thoroughly reliable in cirrhosis of the liver but which for some reason is not widely known and has not come into general use. He reported four cases of atrophic hepatic cirrhosis in each of which sterile specimens of venous blood clotted within normal time, but in which the clot redissolved completely within a few hours at body temperature. He designated this phenomenon fibrinolysis. The clotted blood from normal individuals will usually stay for several days at body temperature without redissolving. The fibrinolysis test for cirrhosis of the liver, particularly for atrophic cirrhosis, appears to be quite constantly positive. I have found it to be so in all such cases in which we have had occasion to perform the test.

The fibrinolysis test performed September 12, 1921, was clearly positive with complete resolution of the clot within eight hours.

Cambridge, Forsyth and Howard have made a further contribution to the study of hepatic function. A certain quantity of sugar is normally present in circulating blood. Its amount is determined after removing the blood proteins. If this protein free filtrate is hydrolyzed with heat and hydrochloric acid—a procedure which would convert starches, dextrans and the higher polysaccharides into glucose—there results little or no increase in the amount of sugar. Therefore, in normal blood there is little or no higher sugar compound capable of producing glucose on hydrolysis. In diseases of the liver or pancreas, however, such substances do apparently exist in the blood. The determination of blood sugar after hydrolysis gives considerably higher values than without hydrolysis. More sugar has been formed. Cambridge and

his co-workers choose to call the difference between the ordinary sugar value and the higher value after hydrolysis, the "difference value" of the blood. Observations on normal blood have shown that the difference value is very small and is not appreciably influenced by food or by the nature of the diet. In cases of pancreatic disease the difference value is high. This is particularly true in the fasting patient. If a patient with pancreatic disease is absorbing food, the blood sugar rises. The "difference value," however, falls. In other words, the abnormal substance tends to disappear during the digestion and absorption of food. As the blood sugar falls to normal, after digestion, the difference value again rises. This inverse relationship appears, according to the authors, to be characteristic of disturbances of pancreatic function. The nature of the food seems to exert little influence.

The investigators believe that in pancreatic disease there is present in the blood an abnormal substance which on hydrolysis becomes changed into sugar. This substance appears to be derived chiefly from the glycogen stores of the liver and is an intermediate product, probably a dextrin, formed in the conversion of glycogen to sugar. The liver contains a starch-splitting ferment by whose activity the glycogen is broken down. The pancreas, possibly through its internal secretion, exerts a restraining influence on this ferment. Deficiency in the secretion from the pancreas gives greater liberty of action on the part of the glycolytic ferment, and results in the formation of the intermediate product. Stimulation of the pancreas by digestion causes that organ to pour forth the hormone in greater abundance so that the inhibitory action on the liver ferment temporarily approaches more nearly normal. The difference value falls. With lessening of pancreatic activity, after digestion, the difference value again rises to its abnormal level.

According to this theory both liver and pancreas play a part in the deter-

mination of the difference value. In hepatic derangements, the difference value curve differs from that described in disease of the pancreas. During fasting, it is abnormally high in pancreatic disease, while in hepatic insufficiency it is within normal limits at this time. Here again the blood sugar rises after a meal, and after about three hours gradually falls to the normal level. The difference value rises likewise but continues to increase for several hours independent of the later fall in sugar concentrations, until a level which may be ten or twelve times the highest normal limit is reached. Sometimes the rise is rapid and reaches its maximum within four hours after a meal, while at other times it requires as long as seven or eight hours. There is no constant relationship to the blood sugar, such as was found in pancreatic disease.

In disease of the liver there is little or no abnormal dextrin in the blood of a fasting individual, but after a meal it appears and continues to increase in amount for several hours. Later it gradually disappears. In pancreatic disease the substances disappear during digestion while in liver disease this is when they do appear. The return to the initial level is more rapid in the former condition and occurs synchronously with the return of sugar values to normal. In liver disease the return to the original level is prolonged and does not synchronize with the sugar curve.

Cambridge and his co-workers suggest that the hepatic type of curve is due to the passage through the liver and into the systemic blood, of dextrins derived from absorbed food, which the damaged liver has been unable to completely remove from the portal circulation.

The hypotheses suggested by Cambridge and his associates in explanation of the curves are complicated and presuppose a complex harmonic interrelationship between the liver and the pancreas. There is also considerable discussion of reactions of the higher polysaccharides which at present is purely theoretical. Here again so many organs of the body play a part in sugar meta-

bolism that conclusions must be accepted with considerable caution. However, if the curves of difference value are found to be characteristic in liver disease, the test will be of assistance even though the explanation be questioned.

The difference value curve in the case under consideration is shown in figure 3. The full line indicates the blood sugar value after hydrolysis of the filtrate. It will be noted that at first there is little difference but as the blood sugar (dotted line) falls, the hydrolysis value falls to a less extent and the difference value (indicated by the dotted line), continues to rise for some time. This is the characteristic hepatic type of curve as described by Cammidge and his associates.

Figure (1) illustrates a normal difference value curve, figure (2) that described as characteristic of pancreatic disease. These two figures are taken from Cammidge. Figure (4) from a case of carcinoma of the liver without jaundice or other signs of hepatic insufficiency, may be interpreted as a variant of the normal type of curve. In figure (5) we find for comparison the curve in a case of carcinoma of the pancreas with obstruction of the common bile duct and deep jaundice.

Widal, Abrami and Iancovescu in an investigation of the functional efficiency of the liver from the point of view of protein metabolism have evolved a very simple test. Their work is based upon two assumed facts. During normal digestion of protein, intermediary products of digestion such as the albumoses are absorbed into the portal circulation together with the amino acid end products. The liver removes these poisonous substances from the blood thereby preventing entrance into the systemic circulation where their presence would otherwise produce anaphylactic manifestations. It is this ability to remove or destroy the poisonous substances absorbed during protein digestion which the authors would measure.

The intravenous injection of peptone produces a rapid blood crisis characterized by leucopenia, fall in blood pressure

and decrease in the clotting time of the blood. These authors claim to produce similar changes after shunting the blood past the liver by an Eck fistula type of operation, provided the experimental animal is at the time digesting protein food. The same operation in a fasting animal produces no such blood-vascular reaction. Similar reactions were obtained by intravenous injection of blood aspirated from the portal vein. According to the hypothesis, while the normal liver removes these poisonous substances from the portal blood, in hepatic insufficiency, their passage through into the systemic circulation causes a blood reaction similar to that from peptone.

The test as carried out is very simple. The blood pressure, white count and clotting time are each recorded two or three times at twenty-minute intervals on the fasting patient. The patient is then allowed to drink 200 grams of milk. The examinations are then continued at the same intervals. With an intact liver there is little change. The white count either remains normal or an actual leucocytosis develops.

The blood pressure shows little change or even rises. In liver insufficiency on the other hand, a rapid fall in white count occurs which usually reaches a minimum at the end of an hour. The blood pressure may fall ten or twenty millimeters. The clotting time becomes reduced. The most constant finding and the only one for which search is made in routine examinations is leucopenia. The cell count often falls to less than half the original figure.

Lactose or butter fat ingested will not produce this reaction, but 8 grams of casein, the amount present in 200 grams of milk, will do so provided the liver is diseased.

By this test the authors claim to have shown mild liver damage following anesthetization by chloroform or ether, following arspenamine administration and in chronic alcoholism.

The method appeals because of ease in determination and because of the apparently logical interpretation, in terms

of existing knowledge and theories. Certain drawbacks must be considered. The authors obtain a similar reaction in diabetics after the administration of glucose. This reminds us that there are many possible causes for leucopenia and that such a reaction in and of itself is not specific. Moreover they report positive reactions in rather large percentages of cases of pneumonia, tuberculosis, acute and chronic appendicitis, typhoid and paratyphoid fever, nephritis with increased blood urea nitrogen, and other diseases. Their interpretation is that in these diseases there is often mild, clinically latent hepatic insufficiency. Granted that this explanation is the correct one and that the reaction is entirely specific for hepatic functional changes, we must conclude that the non specificity of the test is somewhat of a drawback to its usefulness.

Table (1) shows that in the present instance a hemoclastic crisis was not observed.

Arrangement had been made for the performance of a phenoltetrachlorophthalein test, but the sudden death of the patient prevented its being carried out.

TABLE I

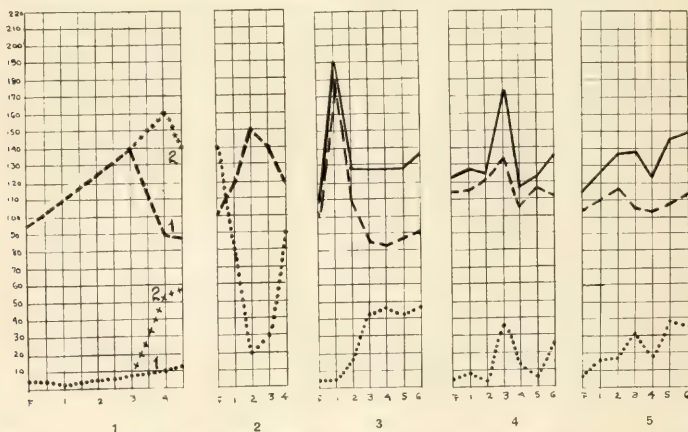
	Wbc.	Polys.	Lymph.	Trans.	Eosin.
10:00 a. m.	3,000	72	21	4	3
10:20 a. m.	2,800	76	24		
Milk taken at 10:30 a. m.					
10:50 a. m.	3,000	75	24		1
11:20 a. m.	3,200	72	26		2
11:40 a. m.	3,600	74	22	2	2
12:05 p. m.	4,000	72	26		2
12:25 p. m.	4,400	76	22	2	
12:45 p. m.	5,000	78	22		

Summary

A case of Banti's disease is reported with diagnosis established at necropsy. The liver, which had been found to be markedly enlarged at operation, five years later, at necropsy, presented the characteristic picture of an atrophic cirrhosis. In a study of the functional efficiency of the liver, it was found that the Goodpasture fibrinolysis test was clearly positive, the Cammidge difference value curve was of the type described as characteristic of hepatic insufficiency and that no hemoclastic crisis was observed after the administration of 200 grams of milk.

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Broken lines indicate the blood sugar values obtained. Full lines indicate the blood sugar value after hydrolysis. Dotted lines indicate the "difference value," as described in text. In figures 1 and 2 the hydrolysis value is not indicated, but the difference value, which is obtained as the difference between the original blood sugar and the hydrolysis blood sugar value, is indicated.

Fig. 1. Normal curve, (1) after test breakfast, and (2) after a test breakfast and the additional administration of glucose two hours later.

Fig. 2. Pancreatic type of difference value curve.

Fig. 3. Banti's disease.

Fig. 4. Carcinoma of liver without jaundice.

Fig. 5. Carcinoma of head of pancreas, with jaundice.

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TRIFACIAL NEURALGIA*

With Special Reference to the Diagnosis, and the Use of Alcoholic Injections

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Trifacial neuralgia, while not one of the diseases very frequently encountered, is one of such overwhelming seriousness to the patient that it behooves every physician, not only to be aware of its existence, but also to be able to make certain its proper diagnosis. Major neuralgia is a definite clinical entity, a disease as distinct and separate from all the other neuralgias, pains and aches about the head and face as acute appendicitis is among diseases of the abdomen.

The cause of this dread disease is still unknown. Gout, chronic malaria, rheumatism, alcohol, lead poisoning, arteriosclerosis, syphilis;—that common and much over-used list of etiological factors, enumerated, if you remember, in most text books on medicine;—never cause trifacial neuralgia. Nor is trigeminal neuralgia due to an ascending neuritis from dental caries, as some would have us believe. Infection of the naso-accessory sinuses has never caused this major neuralgia. In short, Dr. Frazier goes so far as to state that "if one reads or hears of a case in which a patient is alleged to have been cured of trifacial neuralgia by sinus drainage, or by eradication of any other focus, one may be sure that the neuralgia is not the major neuralgia" as he understands the term. The etiology then still remains in doubt.

The disease is not peculiar to any one occupation, and perhaps no occupation is exempt. It occurs among the poor

and among those of better circumstances, and the possession of great wealth seems to bestow no immunity. Exposure to inclement weather can scarcely be said to be a cause, when the attacks more commonly occur during the spring, summer and autumn. Yet, when an attack is on, exposure to cold does increase its severity.

What is the pathology of this torturing malady? When the first gasserian ganglions were removed by the surgeons, the pathologists are said to have seized upon these with avidity, subjected them to the most scrutinizing and zealous study, and later described in great detail changes noted in the lumina of the blood vessels, even changes in the blood vessel walls, increase in connective tissue, etc. But in spite of all this, after thirty years, the pathology is unknown. Males are said to be more commonly affected than females, and the age range is between 25 and 55 years, although there are plenty of cases developing earlier, and many more later.

The clinical picture is one of striking and memorable characteristics, both to the patient and physician. The patient is usually going about his ordinary affairs of life and in usual health, when suddenly, without any warning whatever, a severe, sharp, stinging, burning or stabbing pain strikes him somewhere in the area supplied by the fifth cranial nerve, holds him helpless in agony a few minutes and then is gone. In surprise he feels the part, perhaps looks at it, wondering that there is no visible

*Read before Mecklenburg County Medical Society, September, 1925.

or palpable evidence of the recent stroke, and after a few minutes of so pondering, he is amazed to have the same pain assail him with even more force. Again he endures the most fearful torture for what seems an eternity, but it really only a minute or so, and finally he is as free from pain as at the first. This continues for hours or days on end and then the "attack" is over for a time. He may enjoy freedom from pain a year or so, but after a longer or shorter interval it will come back,—just as certain as it is trifacial neuralgia it will come back. Finally as the attacks succeed each other they usually become of longer duration and the intervals between the attacks grow shorter and shorter. If still there is no relief the patient is driven to opium or to death itself.

Such are the typical attacks. Talking, eating, shaving the face, or the application of water may cause the sudden onset of pain. Usually there are small points somewhere in the distribution of the involved nerve trunk where the pain seems to be more intense, where the pain may be started by irritation—the so-called "trigger points." The location of these points is somewhat interesting. It is common to find one just between the angle of the nose and the border of the upper lip,—another in the roof of the mouth, over the hard palate,—another in either upper or lower gum, and still another along the border of the tongue.

The expression of the sufferer's face during an attack is one of terrific pain. The muscles are thrown into violent spasms of contraction, the affected side of the face becomes congested and suffused, the eye becomes overrun with water from excessive lachrimation which runs down over the cheek. Suddenly all symptoms disappear and the patient looks normal again. These attacks sometimes come on while the physician is obtaining the history.

The second division is most frequently involved at the beginning and the third the least frequently. It is rare

for more than one side of the face to be involved.

Now as can be readily seen, with such a history, the diagnosis may be very easy, but there are many times when the diagnosis is not so obvious and study and experience are necessary before a conclusion can be reached. The diagnosis of *tic douloureux* is not justifiable according to Frazier; first, when there is an associated area of hypesthesia or anesthesia in the trigeminal zone; second, when the pain is continuous and not paroxysmal; third, when in the early stages there are no intervals of complete freedom from the pain; fourth, when the pain does not correspond to the anatomic zones; and, fifth, when the pain is not referred primarily to the terminal areas of nerve distribution. Trigeminal neuralgia is quite a definite disease, occurs periodically with intervals of freedom from the symptoms, and the pain can never be referred to any other region than that supplied by one of the branches of the nerve. In making the diagnosis the all important factor is the one of obtaining the patient's history. The physician must listen patiently and carefully to the history as given by the person afflicted. It is of great service to have this often repeated in order that the clinical picture may become clear and not confused. The more indefinite and confused the picture, and the more the pain expression varies in character and location in the individual case, the surer one can be that the neuralgia belongs "to that miscellaneous medley of pains and discomforts which baffle the physician both in diagnosis and treatment." There are no objective signs of the disease and therefore the diagnosis must rest alone on this history of the case.

In regard to the differential diagnosis, the physician must always guard against allowing himself to be misled by exaggeration of the patient, particularly is this true in neurotic subjects. In these cases, the best method of precaution to be taken is to have the patient repeat his or her history several

times.

Then, there are neuralgias of the face which are secondary to infection of the teeth, tonsils, etc. Such a case is probably a peripheral neuritis and is a commonplace ailment. The pain in this case is constant, throbbing, is due to infection, and subsides with the inflammatory process. Above all the pain is not paroxysmal, coming and going with intervals of complete freedom. Such are the distinguished features.

There are the post-herpetic neuralgias. Here again the pain is not paroxysmal, but is more constant with acute exacerbations. The most conspicuous feature of these neuralgias is the hypesthesia of the skin in the affected zone.

Neuralgias of the face are seen in association with hemicranias or migraine. These are usually distinguished from the major neuralgias by the associated vasomotor disturbances seen in the migrainous subject, the sudden pallor, the sudden flushing, etc., of the face, with dilatation of the pupil and salivation.

Again there are the atypical, or idiopathic neuralgias. These are not due to infection, as is inferred from the name, the cause is unknown. The pain in these cases is different from that in tic douloureux. First the pain is not referred to the periphery, as to the lips, the chin, the alae of the nose, and it is not related to anatomic zones. It may and often does extend beyond the trigeminal territory, as into the neck, the submaxillary or retromastoid region. The pain is referred chiefly to the malar region, the orbit and the temple, and usually is described as a pulling, a drawing, or boring, or as an ache. It is constant, not paroxysmal, worse at night and may be relieved by opium.

Finally, the infrequent neuralgias accompanying tumors of the gasserian ganglion of all the facial neuralgias are most likely to be confused with the major form. But here there are certain distinguishing objective disturbances of the skin, and especially hypesthesia, first observed in the cornea.

Such are the common face pains with which trifacial neuralgia may be con-

fused. First, the clinical history is of greatest value; then the presence or absence of objective signs,—which if present argue against major neuralgia, a careful naso-pharyngeal examination; and, finally, if all else fails, the therapeutic alcoholic injection. In all cases before the radical operation is employed for the cure, the diagnosis should be tested by the alcoholic injection.

The treatment has long been relegated to the surgeon, medical treatment at the outset being hopelessly inadequate. Surgery has gone through many phases in the evolution of our present day method of dealing with what Coughlin has called this "prince of pains." Albinus and Galen in despair suggested nerve division; however, the first record of it is by Schlichting, in 1748. But the severed ends united and various methods have been resorted to in order to prevent such reunion. Klein in 1822 crushed and cauterized the divided ends. Malgaigne split them and folded them back. And finally Delpsch said that nothing could prevent them uniting. Then Roux suggested that sections be removed and these were made longer and longer until entire branches were twisted and torn away—in vain; the pain returned. Nerve stretching was tried for a time with no better results.

Operations not directed against the nerve itself are countless. Removal of Meckel's ganglion, ligation of the common carotid, ablation of the cervical sympathetic ganglia, operations on the eye, the nose and accessory sinuses, tonsils, gums and teeth, have all been tried and found wanting. Of all the futile operations, that receiving most condemnation, and the one, strangely enough, most widely resorted to, is the extraction of teeth,—not one but frequently all. Of all the means and methods of treating trifacial neuralgia, only two are worth considering today. The one is the radical operation of division of the sensory root of the ganglion within the skull, conceived by Spiller, and first done by Frazier, about 20 years ago. The other, the deep alcoholic injection of the nerve sheath as it leaves the skull

is only palliative. Of the former I shall have nothing to say in this short paper. Of the latter there are certain features which I wish to emphasize.

Alcoholic injection into the nerve sheath will bestow immunity from pain positively and certainly for periods averaging 7 months to one year. This is indicated in the reports of Frazier, of Adson at the Mayo Clinic, of Coughlin at St. Louis and numerous other authors. Much longer periods of relief are also noted. Let no one consider that this procedure is not without considerable risk. The literature is full of mishaps. In injecting the third division, for example, the Eustachian tube may be entered. A too deep penetration for the second division may perforate the nose or floor of the orbit. Injection of the first division is fraught with great danger and is practically discarded, peripheral avulsion being the method of choice. But if the risks are known, and all precautions are taken the nerves may be injected just after they leave the skull. There are risks

in every field of surgery and it is only through a consciousness and knowledge of what these are that they are avoided. So it is in the present case.

Now as to the success of the injections. In the first place the diagnosis must be correct. Injection of the trigeminal nerve will certainly not influence the pain in any one of the other forms of neuralgias already mentioned. Secondly, the alcohol must be injected in the nerve sheath or in close proximity to the nerve. When the needle reaches the nerve area the patient will likely experience painful sensations in the area of distribution. Finally the complete success of the injection is at once proclaimed by anesthesia of the skin in the area of distribution. If this is not present, the injection has failed, and the patient will have naturally no lasting relief. Some of the alcohol may, even if injected some distance, trickle to the neighborhood of the nerve and cause a brief relief from the pain.

819 Professional Bldg.

CLOSER CO-OPERATION

H. O. LINEBERGER, D.D.S., President North Carolina Dental Society, Raleigh

All Societies and Organizations have Constitutions and By-Laws under which to operate and without which they would be helpless. While it is necessary to have designated certain definite duties and orders of procedure, the fundamentals upon which all society is based must be back of that; there must be a certain moral standard of respect, obligation or duty to a higher motive,—this motive we have chosen to call Ethics.

Since our Codes of Ethics are truly the foundation upon which our societies are based, then it is imperative that a study of the Code of Ethics of the Medical and Dental professions be made; our aims and modes of procedure gone into, and differences, if there be any, ironed out, before we can hope for that even and frictionless co-operation which many able members of both pro-

fessions are striving to bring about.

It is obligatory in the North Carolina Dental Society that all applicants for membership, in making application, sign a blank, stating they will abide by, not only our Constitution and By-Laws and the State Law, but also by our Code of Ethics. I feel sure this same requirement is exacted of all applicants for membership in the North Carolina Medical Society. For this reason, I feel that every one is familiar with the ethical standards of his profession, but in order that we may have a comparison of the standards, I deem it wise to review the headings of the separate Articles in the Codes from which we can gather the striking similarity.

The Code of Ethics of the American Medical Association, under which the North Carolina Medical Society oper-

ates, adopted in 1903, provides:

I. Duties of the Physicians to their Patients.

II. The Duties of Physicians to each other and to the Profession at large.

1. Duties for the support of Professional Character.

2. Professional Services of Physicians to each other.

3. Duties of Physicians in regard to Consultations.

4. Duties of Physicians in cases of Interference.

5. Differences between Physicians.

6. Compensation.

III. Duties of the Profession to the Public.

The Code of Ethics of the North Carolina Dental Society, adopted at the reorganization of our society in 1875, so thoroughly covered our needs, and its provisions are so everlastingly human, that we are today working under the Code as originally adopted; the provisions of which are classed under the following headings:

I. Duties of the Profession to Patient.

II. Professional character.

III. Relative duty of Dentist and Physician.

IV. Mutual duties of the Profession and the Public.

A careful comparison of the headings of various chapters and sections will show the close similarity of the two codes. The wordings in some of the sections are identical.

If the old law which teaches that "things equal to the same thing must necessarily be equal to each other" is true, it therefore follows that a doctor, though he be surgeon, physician or dentist, is bound by the same moral code of standards and all have one ultimate end in view.

Believing in our stated principle of correct practice, and feeling that the members of the North Carolina Medical Society have no less respect for theirs, our society stands today and has always stood for a closer relationship between physician and dentist. To show that we believe in these fundamentals, there is now functioning in our society a committee on Oral Hygiene, whose duty it is to work mainly in conjunction with the State, County and City Health Departments. Another is the Committee on State Hospitals and Institutions, whose duty it is to ascertain if proper dental care is furnished these Institutions and to co-operate in any way they can with the designated authorities. The Dental-Medical Committee, with a representative in each of our five districts, has been appointed, with the special duty to encourage and help arrange, where possible, more joint meetings of the two professions.

The North Carolina Medical Society through its County and local societies is striving with the same co-operative spirit in mind. This is shown by the fact that in some Counties, physicians and dentists meet regularly in joint session.

From all these facts and existing conditions, it is clear that the organizers and leaders of both the Medical and Dental Societies, up to and including the present, have striven for closer and more harmonious relations. In these days of discussions and upheavals, let's remember that in the fundamentals or essentials we must have Unity. With the non-essentials be liberal, in every act practice tolerance and charity. If a doctor's ethical and moral standards are sufficiently high to practice conscientiously in his chosen profession, then he cannot but respect and help to elevate the ethical members of the other profession.

THE EARLY DIAGNOSIS OF TUBERCULOSIS FROM THE STANDPOINT OF THE GENERAL PRACTITIONER

P. P. McCain, M.D., Sanatorium, N. C.

A recent survey of the after-results of treatment of the 2,618 patients discharged from the North Carolina Sanatorium during my service over the past 11 years shows the following:

Of incipient cases 93 per cent are living and 82 per cent are working.

Of the moderately advanced cases 60 per cent are living and 43 per cent are working.

Of the far advanced cases 28 per cent are living and 12 per cent are working.

How eloquent are these figures of the need of an early diagnosis! What could show more plainly that even under the most favorable circumstances the results of treatment in tuberculosis depend very largely upon how soon the diagnosis is made? Moreover, the danger of the individual as a source of infection to the community depends very largely on how soon his tuberculosis is discovered. Oftentimes whole families or households are infected simply because one of their members has well-developed tuberculosis and takes no precautions against spreading his disease, since he does not know the nature of his trouble. Advanced tuberculosis is a two-edged sword, less curable and more contagious.

The hope of a successful campaign against this decimator of the human race depends largely upon prevention and early diagnosis, and the hope of an early diagnosis depends very largely upon the general practitioner or the family doctor. He is the one first consulted and his opinion is usually final.

Faced with the responsibility of deciding whether or not a patient has tuberculosis, what should be the attitude of every honest general practitioner? Since tuberculosis causes more sickness than any other disease, he should consider it as a possibility in most of the diagnoses which he is called upon to make. He should realize the tragic possi-

bility of a failure to diagnose the disease in the early stage. He must be willing to devote the time necessary for further study of the case, which will rarely be less than an hour, or refer the patient to some one else. He should realize his own limitations because of lack of special facilities, such as x-ray; and possibly lack of training in physical examination, and possibly lack of constant practice with the stethoscope. He needs to give far more weight to symptoms than to physical signs in making his diagnosis. *Lastly, in all cases where he is in doubt he should avail himself of consultation service, sending those who can afford it to private specialists and those who cannot to the free clinics.*

The ordinary means of arriving at a diagnosis are: first, history of the symptoms; second, physical examination, third, x-ray examination; fourth, laboratory examinations.

In a well-equipped sanatorium, manned by competent specialists in each department, I feel that the history of the symptoms, the physical examination and the x-ray examination are usually of equal diagnostic importance. In the North Carolina Sanatorium we have studied in this way more than 3,000 cases, comparing in staff conferences the physical and x-ray findings and giving consideration to the history of the case. In determining the degree of activity and the patient's resistance, the symptoms are of more importance than the physical and x-ray examinations combined.

The general practitioner should make symptoms of paramount importance in the diagnosis of early tuberculosis. If in a sanatorium, symptoms and physical signs should each be allowed 33 1-3 per cent in arriving at a diagnosis, the average general practitioner should allow symptoms to count from 75 to 90 per cent and the physical examination

from 10 to 25 per cent.

There may be good reasons why many general practitioners cannot determine accurately all the physical signs, but there is no reason why any physician shouldn't be able to make an accurate record of a patient's symptoms. Furthermore, the important symptoms of tuberculosis are comparatively few and uncomplicated and there is no reason why every physician should not have a thorough knowledge of these symptoms. With sufficient time and care he can usually get enough information from symptoms alone to make a fairly accurate diagnosis of early tuberculosis. The history should be written down so that each symptom can be fully considered and evaluated in arriving at a diagnosis.

What, then, are the most important symptoms of tuberculosis? There is none which is pathognomonic. The following four symptoms are so nearly always due to this disease, however, that they should be considered due to tuberculosis unless some other cause can be found:

First, a hemorrhage from the lungs of a teaspoonful or more.

Second, pleurisy; either dry or with effusion.

Third, an anal fistula.

Fourth, subnormal morning with an elevated afternoon or evening temperature.

The presence of any of these symptoms should cause a physician to make a tentative diagnosis of tuberculosis, and he should not rule out tuberculosis until every facility for diagnosing the disease has been used.

While these four symptoms are probably the most characteristic of tuberculosis, they are not the most frequent initial symptoms.

The insidious onset is quite common, with gradual loss of energy, weight and strength. Patient usually says he has no "pep" or that he feels "rundown"; he feels pretty good in the morning after a night's rest, but as the day wears on the above symptoms become more marked. This is in contrast with the conditions which cause one to feel tired

out on awakening and better after he works a while.

The catarrhal onset, with cough and expectoration, comprises the group of symptoms most commonly associated in the lay mind with tuberculosis. A cough lasting more than three weeks should be regarded with suspicion, but many cases of early tuberculosis have no cough or expectoration at all. There is nothing especially characteristic about the cough from tuberculosis. It usually is worse in the early morning and frequently occurs only then. The expectoration is also more abundant at that time.

The gastro-intestinal symptoms are quite common even in early tuberculosis: Loss of appetite, gas, sourness, feeling of fullness and heaviness after eating; and with these, of course, loss of weight. In most cases presenting these symptoms there is a deficiency of hydrochloric acid, which is probably the result of a tuberculous toxemia.

The most frequent cardiovascular symptom in early tuberculosis is an increased pulse rate. In the more advanced stages a lowered blood pressure is the rule, but the pressure is frequently unaffected in early disease.

Time will not permit a detailed discussion of all the symptoms, but I do wish to call especial attention to the temperature in tuberculosis. A correct temperature record, taken at least three times a day, morning, afternoon and evening, is essential and will frequently point the way to a diagnosis. If it is not convenient for the physician or nurse to take the temperature as often as necessary, the patient or some member of his family can be taught in a few minutes to use the thermometer accurately. In tuberculosis the thermometer is of very little help if used only once a day. The temperature,—subnormal in the morning and elevated in the afternoon or evening,—is sometimes caused by other conditions, but its presence should cause the physician to use every available facility for making a diagnosis before ruling out tuberculosis. There is also a strong tendency for the fever in early tuberculosis to

subside on complete rest in bed, and to return on exercise.

Cold night sweats, dyspnea, chronic hoarseness, diarrhea, et cetera, are symptoms of advanced and complicated tuberculosis which I need not take time to discuss in this paper.

While the average general practitioner cannot be expected to be an expert with the stethoscope, he can, with the proper effort, attain to a fair degree of accuracy in making a physical examination. Proficiency does not depend so much upon brilliancy as upon painstaking care. Lack of practice, lack of system and carelessness are responsible for most errors made. No one would think of painting his house only in spots and yet it is not infrequently the case that physicians make just a here-and-there examination of a patient's chest, when upon the result the fate of the individual and of those with whom he lives depends. One needs to be systematic without being mechanical. System will both save a great deal of time and lead to a greater thoroughness in the examination. The whole chest, both front and back, should be examined by inspection, palpation, percussion and auscultation. Especial attention should be given to auscultation, the character of the breath sounds being first ascertained by having the patient breathe quietly but through the mouth comparing symmetrical points on the two sides from apex to base. This should be followed in the same manner with the whispered voice sounds. In order to determine the presence or absence of rales deep breathing through the mouth should first be used and then the cough at the end of expiration, going over each side carefully from apex to base and, of course, going over both front and back.

All parts of the examination are important and none of them should be omitted, but the cough, when properly executed, is of such value in eliciting rales which cannot otherwise be detected that in my judgment this step of the examination is of more value than all other procedures combined. I am inclined to think, too, that compara-

tively few general practitioners use this procedure at all in making their physical examination, so, even at the risk of being tedious, I think it worth while to explain the method in detail.

It is essential to have the patient cough exactly at the end of expiration and to inspire deeply through his mouth just following the cough. It is often quite difficult to get a patient to cough properly. His natural inclination is to draw in his breath and cough it out as in the usual cough, but that kind of a cough is of no value at all. The proper procedure is of such importance that any amount of patience and pains necessary to teach the patient to cough as he should will be fully rewarded. I sometimes find it necessary, even after explaining and illustrating the procedure, to follow this up by telling him each step as follows: "Let your breath all out slowly, now give a little cough, now take in a deep breath through your mouth." Oftentimes it will be sufficient to give some signal, such as a slight pressure on the arm, at the proper time to get the patient to cough when he should.

The localized rale is the most important physical sign of tuberculosis and by the methods described rales can be detected in a large percentage of early cases of tuberculosis, when they cannot be detected by any other procedure. The rales are heard most frequently toward the end of the deep breath following the cough; at times they are only heard during the cough. Persistent rales of whatever character, localized above the third rib, usually mean tuberculosis, and localized moist rales over this area are practically always due to tuberculosis. Rales limited to the base are usually due to some non-tuberculous condition.

The laboratory will be of some assistance in helping to decide the character of basal lesions. In such a lesion if several sputum examinations are negative, and there are no strongly suspicious symptoms of tuberculosis, such as a hemorrhage or pleurisy, one is justified in saying that it is probably a non-tuberculous condition. In an apical

lesion, however, one is not justified in ruling out tuberculosis, even though numerous sputum examinations are negative. A positive examination of sputum by a dependable laboratory makes the diagnosis certain, but in early tuberculosis sputum is usually negative and quite frequently the early case does not expectorate. On this account the laboratory is of limited value in the diagnosis of early disease. The physician should, nevertheless, make it a rule to have the sputum examined frequently when any patient who comes under his care has any expectoration. Of course every one knows that the state laboratories will make the examinations without charge. Other laboratory procedures, such as the complement fixation test and animal inoculations, do not need to be discussed in this paper.

The x-ray is a great aid in the diagnosis of early tuberculosis, though the single flat plate is of little value. At the North Carolina Sanatorium we have compared the physical and the stereoscopic x-ray findings in 4,000 patients and we feel that in the hands of the expert chest radiologist the stereoroentgenogram is of equal importance with the physical examination in the average case, and in an occasional case it will show the presence of tuberculosis when there are no physical signs. Unfortunately, however, the x-ray is not available for the personal use of the average general practitioner.

The general practitioner cannot be expected to be an expert in every branch of medicine. There are few conditions in which he should so regularly avail himself of the services of the consulting expert as in tuberculosis. He should refer every doubtful case to a chest specialist. We are fortunate to have here in our own State a number of as competent private specialists as can be found anywhere. Those who can afford it should be sent to the private specialists and those of limited means to the free clinics.

There are a few local city and county tuberculosis clinics in the State, and at the Sanatorium we conduct a diagnos-

tic clinic where any physician in the State can get free consultation service. The only requirement is that either he or his patient write us for an appointment. In the last few years we have examined in this clinic nearly 10,000 cases.

In addition to the clinic at the Sanatorium, we are now employing two whole-time specialists for the purpose of holding free diagnostic clinics in whatever cities, counties and communities throughout the State their services are desired. We are especially anxious that every doctor in the State can, with as little inconvenience to himself and his patient as possible, have the opportunity of finding early every case of tuberculosis that comes under his care. The time has come when patients appreciate the thorough investigation of every doubtful evidence of tuberculosis and when they unsparingly condemn the physician who, through carelessness or ignorance, allows their tuberculosis to steadily progress under the caption of "chronic malaria," "chronic bronchitis," or what not, until they become hopeless consumptives. We are greatly encouraged over the increasing number of physicians in our State who are realizing their responsibility to their tuberculous patients. From 60 to 75 per cent of those examined in our clinics are negative.

Summary

1. The hope of a cure and of preventing contagion in tuberculosis depends upon early diagnosis.
2. The hope of an early diagnosis rests largely in the general practitioner or the family doctor.
3. The general practitioner should make *symptoms* paramount in diagnosing tuberculosis.
4. The cough at the end of expiration followed by a deep inspiration through the mouth is by far the most important step in the physical examination of a chest.
5. The general practitioner is negligent of his duty to his patient and to the public if he does not avail himself of consultation service in doubtful

cases—the free clinics or the private expert according to his patient's ability to pay.

6. The North Carolina Sanatorium is anxious to assist the physicians of the

State in their diagnostic problems in every way possible. We conduct a free clinic at the Sanatorium and also employ two traveling specialists for this purpose.

EXANTHEM SUBITUM*

JOHN R. ASHE, M.D., Charlotte

This is a very mild disease without complications or sequelae, and so far every case reported has gotten well. There are several reasons why I have selected this disease as the subject of my paper. First—It is a comparatively new disease, being first described and the name Infantile Roseola suggested for it in a paper by Zahorsky in 1910. He reported six cases at this time. In 1913 this author reported 29 more cases. Then nothing more was heard of the disease until two years ago when reports began coming from various cities of the middle west and Canada. Last year five cases were reported by Beaver of Rochester, N. Y. As far as I know no reports of this disease have been made in this section. Within the past year Veeder & Hempleman of St. Louis, suggested the name Exanthem Subitum, and as this name so adequately describes the disease it has been generally accepted, and later reports have come out in that name. Exanthem subitum literally means a sudden unexpected rash, and that is a very important feature of the disease. Second—For several years we have been having quite a number of cases here in Charlotte. In searching my records back to July, 1921, or for three and a half years, I have been able to find 39 definite cases that have occurred in my practice, and, as my case records are not indexed, I think it very likely that I might have missed finding some. I have a number of others that are not very definite which are not included in this report. Third—It is almost impossible to make a diagnosis before the rash occurs and some of these little

patients cause great anxiety to parents and physician during three or four days of a high and unexplained temperature. My youngest case was a two weeks old, only child in a family who a few months before had lost a six year old daughter, at that time their only child. You can well imagine how these parents worried for three days and how they and the baby added to the doctor's worries. Then there is the slight possibility of regarding this disease as measles or German measles and unnecessarily quarantining the house.

Exanthem subitum is an acute disease, probably not contagious, of unknown etiology, characterized by a sudden onset of rather high fever lasting 3 to 4 days, terminating by crisis, and followed in 24 to 48 hours by a rash which very closely resembles that of measles,—but differing markedly from measles by the fact that the baby is well when the rash comes.

We have some local evidence that rather suggests that the disease is contagious. Last year Dr. Hunter and I had 4 cases at one time in the College Place Apartments. I had a definite typical case in a nine months old baby 18 months ago, followed a few days later by a possible case in a 2 1-2 year old brother, and a few days later by another possible case in a 4 1-2 year old sister. I am calling these possible cases because I did not see them during their illness, getting daily reports by telephone from the mother who said that they were exactly like the baby in all particulars. In only one family were there two cases, and these occurred several months apart.

The disease occurs almost regularly in babies between 6 and 18 months of

*Read before Mecklenburg County Medical Society, January, 1925.

age. In my 39 cases only 2 were under six months,—one 2 weeks and one 4 months,—and only 4 were over 18 months old,—28 months, 2 1-2 years, 4 1-2 years and 12 years. The 12 year old case was absolutely typical and this happens to be the only one on which we have a white blood count, which agreed with the reports of other men in showing a leucopenia.

Of the 34 between the ages of 6 and 18 months, 23 were in their first year and 11 in the first half of their second year.

My cases occurred in years as follows—

1919, 1 (reported from memory); 1920, 1 (reported from memory; 1921, 2; 1922, 9; 1923, 6; 1924, 20. I have seen as many in the past year as during the other five years combined.

Incidence by sex shows no great difference between the two, 21 of mine being in girls and 18 in boys.

There seems to be a definite seasonal variation. During the spring and summer months, April through September, I had 11 cases, while during the fall and winter months, October through March, I saw 28 cases.

Symptoms

Onset is usually very abrupt with sudden rise of fever, which is often sustained but occasionally remittent, and lasts 3 to 4 days ending as suddenly as it appeared. Temperature usually around 103 to 104. During this time there is nothing adequate to explain the fever. The tonsils and throat may be red, and there may be a slight cough; but careful examination is always otherwise negative. Urine always negative and blood count shows a leucopenia.

Ten of my cases showed moderate redness of the throat. One child showed redness and some swelling about right tonsil; another showed very small spots on tonsils suggesting that another 24 hours would reveal a definite tonsillitis; five had slight cough; two showed slight furring of tongue, and one a red ear drum which was incised.

Most of them show some nervous symptoms, fretfulness or discomfort;

two of mine had convulsions.

After 3 to 4 days fever, most often 3, the temperature returns to normal and the child looks and acts like he is completely well. Then after an interval of 24 to 48 hours the eruption appears.

The rash appears on the body and face and neck, and consists of pale rose red or slightly pinkish macules or maculo-papules about 1-2 cm. in diameter. Usually by the end of the next day the rash has entirely disappeared without scaling and the skin looks as clear as before the illness.

Diagnosis

It is hardly likely that this disease could be confused with measles, although the eruption bears some likeness to that of measles. The absence or paucity of catarrhal symptoms and Koplik's spots, with the rash appearing after the crisis should rule out measles.

From German measles it can be differentiated by the longer period of fever before the eruption, the rash in German measles usually coming on the 3rd day, by the lower temperature in German measles, by the catarrhal symptoms in German measles, and by the absence of post cervical adenitis in exanthem subitum, and by the difference in the blood counts,—a leucopenia in exanthem subitum, and a leucocytosis in German measles.

Scarlet fever would hardly be confused as the rash of scarlet comes early, throat symptoms are more severe and desquamation occurs.

Blood count here would also differentiate.

Food and drug rashes would also have to be differentiated.

I wish to emphasize the difficulty of making a diagnosis during the febrile stage by recounting my own experiences. I have checked over the original diagnoses in all of my cases and find that I had to change the diagnosis in fifteen cases, nine being originally called gippe, one tonsillitis, one otitis, one infection of throat, two digestive upsets. In nine cases I had confessed my inability to make the diagnosis by writ-

ing a question mark in the diagnosis line.

In 12 cases I made the right diagnosis, but in 8 of these the rash was pres-

ent on my first visit, so that leaves only

4 cases in which I made the right guess at the right time.

A RECORD OF SAINT PETER'S HOSPITAL OF THE EPISCOPAL CHURCH, CHARLOTTE

The REVEREND EDWIN A. OSBORNE, Charlotte

This Institution was organized in the year 1875 for the benefit of the sick and poor, and for general Church work under the auspices of The Aid Society of St. Peter's Parish, Charlotte, N. C.

Mrs. John Wilkes was at that time President, Mrs. Hamilton C. Jones, Vice President and Mrs. John H. Van-Landingham, Treasurer.

The Institution was without money and without a home. During the first year one hundred dollars was collected and expended for sick and needy members of the Parish and others.

In 1876 the ladies of the Aid Society suggested to the Rev. Benjamin S. Branson, then rector of St. Peter's Parish, the idea of erecting a building for a hospital. This meeting with his warm approval he suggested a plan of procedure which was adopted. At first a small building was rented for \$12.50 per month, furnished and opened under the name of "The Charlotte Home and Hospital," and placed under the charge of a matron with one patient who was a Baptist. Dr. Thomas J. Moore, a young physician, was elected Physician-in-charge, in May, 1876.

In May, 1877, the Hospital, by much labor and self-denial on the part of the ladies of the Parish and others, procured a city lot on the corner of Poplar and Sixth street, in Charlotte, upon which they erected a small brick building which was opened for patients in the year 1878. In 1879 a charter was procured and the Institution was incorporated under the name of "The Charlotte Home and Hospital." This charter was amended in 1893 and the name was changed, as at present, to "St. Peter's Hospital," and authority given to establish a Training School for Nurses.

In 1880 the Church Societies were re-organized and a Board of Managers elected to take charge of the Hospital; also rules for the management of the Hospital were amended and adapted to its changed and enlarged condition.

In 1896 it became necessary to enlarge the building. This was accomplished in 1898 by adding a two story addition with high attic and kitchen; and the building was dedicated by a religious service arranged and conducted by the Right Rev. Joseph Blount Cheshire, D.D., July 15, 1898.

This addition to the building afforded eleven rooms for pay patients with twenty beds and two free wards with five beds each, also an operating room, eight rooms for nurses, a superintendent's room, dining room, reception room, office room and two large rooms for physicians' offices and treatment. This addition cost \$9,875.82, contributed partly by citizens of Charlotte, but very largely by friends at the North in response to appeals made by Mrs. John Wilkes. One lady, Mrs. R. F. Auchmuty, giving \$4,750. The entire cost to this date, 1905, being about \$15,000.00. Until about the year 1894 the work of the hospital was almost entirely of a charitable nature, or at least, so much so that no account was kept of the finances, as whatever was received was merely nominal. Since then a record of the patients has been kept.

In 1904 Mrs. Wilkes resigned her office as Secretary and Treasurer on account of declining health, when three men were added to the Board of Managers, one of whom has since then acted as Treasurer.

In 1905 the hospital began the work of district nursing in the city. One

nurse is appointed each month to visit the sick and the poor, under the direction of the City Physician, or other physicians, who report cases of need to the Superintendent. The city supplies medicine and the hospital supplies everything else. The hospital also supplies relief to the Crittenden Home and to the Thompson Orphanage when requested.

Reports of the State Board of Charities and also the Census of the U. S. Government mention this hospital as the pioneer in this line of work in this State, as I am informed.

About 1917 a movement was started to make important additions and improvements on the hospital. Liberal contributions were made for this purpose first by Mr. J. H. Cutter of Charlotte, who gave \$10,000.00 for special improvements, to which he later added \$25,000.00; Mr. Wm. A. Erwin of Durham, gave \$20,000 as a memorial to provide wards for the treatment of children.

With these contributions and some five or six thousand dollars contributed by others in Charlotte and elsewhere, the building was much enlarged and greatly improved, so that it now contains fifty rooms and does a large work under the wise and efficient direction of Miss Caroline Elizabeth MacNichols, as Superintendent, a position she has filled for the past twelve years with much ability and satisfaction.

Charlotte, N. C., August 7, 1925.

The Quantitative Accuracy of Medicinal Tablets

The Journal, with the aid of the A. M. A. Chemical Laboratory, has called attention repeatedly to discrepancies between the actual composition and the claims made for various tablets and pills sold to the medical profession. Reports have been published of comprehensive investigations by L. F. Kebler, the Connecticut Agricultural Experiment Station, and the New Hampshire State Board of Health. These reports revealed the existence of a deplorable condition, since variations as high as 54 per cent. above and 70 per cent. below the label statements of composition were found. In two-thirds of the tablets examined by the Connecticut Agricultural Experiment Station, the

variation was greater than 10 per cent. Over a year ago G. W. Hoover, in charge of the drug control laboratories of the Bureau of Chemistry, Department of Agriculture, addressed one of the drug manufacturing associations concerning the findings of the government after wide survey of medicinal tablets, following which the two leading manufacturers' associations voluntarily appointed a joint committee, known as the contact committee, to collaborate with the officials of the Bureau of Chemistry. During the past year this group has given a great deal of attention to the subject of hypodermic tablets. Physicians will welcome, therefore, a recent announcement of plans for controlling the degree of accuracy of hypodermic tablets, issued by the federal Bureau of Chemistry, in which is given the maximal premissible variations, ranging from 7.5 to 9 per cent., as suggested by the contact committee. The next study of this group will be on compressed tablets and tablet triturates. The fact that the pharmaceutical industry thus voluntarily collaborates with the government authorities in the establishment of standards is encouraging. Equally encouraging is the fact that the smaller firms, particularly most of those selling to dispensing physicians, are recognizing the necessity of employing not merely standard drugs and mechanical care in preparation, but actual chemical control. As The Journal has insisted for years, every firm engaged in selling drugs to physicians should have a competent scientific staff; this is one good step in that direction.—*Jour. A. M. A.*, July 11, 1925.

Cosmetics

H. E. Miller and L. R. Taussig, San Francisco (*Journal A. M. A.*, June 27, 1925), mention the components of the cosmetics commonly employed, and give in some detail an account of skin eruptions due to their use that have not previously been reported in the literature. They describe dermatoses due to face powder, rouge, lip stick, hair dye, wrinkle remover and nail polish and give, when possible, the component responsible for the eruption. The authors believe that sufficient emphasis has not been placed on the usual components of cosmetics and the dermatoses that they may provoke. Many of the so-called eczemas in women, if carefully investigated, will be found to be cases of dermatitis venenata due to cosmetics. The anilin dye used as coloring matter in the bizarre tints of face powder, rouge and lip stick may cause a definite dermatitis. Hair dyes containing the vegetable pigments are seldom harmful, while those containing the minerals or anilin products may cause skin eruptions or general ill health. The attempted removal of wrinkles by applying phenol to large areas of the skin surface may cause considerable facial deformity and even death.

SOUTHERN MEDICINE AND SURGERY

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*A journal for the promotion and diffusion of
usable medical knowledge.*

Co-operation: The Need, the Means and the Promise

In this issue the President of the North Carolina Dental Society makes a plea for closer co-operation between the members of the dental and medical professions. As he points out, we profess to be governed by codes of ethics practically identical, so there could be no objection on that score; and the necessity in the case of many a patient for collaboration by medical and dental men for effecting a cure, or for guarding against unnecessary, expensive and even dangerous, operative procedures, constitutes an unanswerable argument for the most intimate and friendly working together.

"With the non-essentials be liberal; in every act practice tolerance and charity." Here Dr. Lineberger strikes a high note, which should awaken all but the most sordid of us, and go far toward the promotion of a spirit of emulation as to who can best work and best agree.

It so happens that another article published in this issue carries a strong argument for this course. In his discussion of tri-facial neuralgia, Dr. Gibbon calls attention to the needless extraction

of entire sets of teeth in the vain hope of giving relief. Free and easy consultations, conferences and joint studies of the two professions would go far toward preventing these mutilating sacrifices, hasten the relief from agonizing pain, and raise us all in the estimation of the public.

Need for co-operation exists also in the ranks of the medical profession itself. One which especially concerns us is that which is felt constantly in attempting to publish a medical journal which will best serve the doctor and the public, and reflect the most possible credit on the profession as a whole. Two or three, scattered here and there, are sacrificing much time in unselfishly aiding in this work. Readers of this journal will call these to mind at once. Their services are inestimable. Without them the "crown" would have long ago sat on us, and the best we could have hoped would be that he would have "found it Christian burial." Another few appear never to have thought of the journal except as a source from which to obtain free service, sometimes involving the expenditure of considerable labor, and even gold and silver itself; only to illustrate subsequently the wise observation to the effect that, "gratitude is a lively appreciation of favors to come."

But the vast majority comes not under either of these groupings. This majority is more or less indifferent; and this, we are fully persuaded, is owing almost entirely to thoughtlessness. This is written in order to draw the thought of the ninety-and-nine to the situation, the possibilities, and the means by which these possibilities may be made realities, to the tremendous advantage of us all.

The Journal is not in a weak position, and it is growing stronger with the passing of each month. It has demonstrated its will and ability to live and thrive. This is no sob-story. The reading and advertising columns challenge comparison with those of any State journal, no matter how heavily subsidized. Much of the very best material is produced in

North Carolina: too large a proportion has to cross State lines. We are grateful to our outside contributors, and would not reduce the space allotted to them: we are in no sense chauvinistic; but we would have more first-class contributions from the medical men of North Carolina. As Dr. Minor pointed out in substance, in his address to the Medical Section of the Medical Society of the State, at its last meeting, there are many who can and will not, and some who can not and will. Those of the former class are urged to write up their cases carefully and let us have them for publication. Writing makes for exactness; so, by contributing to the pages of a journal, one will be influenced to make more and more careful records, and in this way a cycle be established from which only good will come.

Now a word which, while not so intended, may appear a bit chilling. It is granted that there must be corrections made, and we expect to make many. In some cases, though, we will correct dozens and let one get by. Don't expect the impossible. We will now and then throw in a few which were not in the article you submitted. But if you could see some of them printed as they come in, you would think Ring Lardner had joined our staff, and the editor would have to leave the State. Some offerings bring to mind the story of an interview between a would-be poet and a famous editor, in which the former, handing in an "original" poem was soon saluted with, "I'm happy to know you Lord Byron; I had heard that you died at Missolonghi."

We believe that doctors over the State would be much interested to know the news of all kinds about their brother doctors; their partnerships,—professional and matrimonial; their special studies; their new offices and hospitals; their illnesses; and, finally, to know about their taking off, in order that suitable and timely notice may be taken. The journal would love to fill this want, and, to that end, to have monthly communications from each County Society's Secretary, covering these points, and

embracing, in addition, his Society's programme. The Secretaries of District Societies are urged to make similar use of our columns.

At a meeting of one County Society a proposition was made to supply the Secretary with thoroughly worked-up case reports, to be studied, then presented and discussed at some of the meetings, after which the Secretary would read the autopsy report or other later developments for comparison, and summarizing. This met with an enthusiastic response. Most likely something similar would appeal to many other Societies and prove advantageous in many ways.

Our subscribers invest hundreds of thousands of dollars each year in surgical and scientific instruments and appliances, hospital furniture, automobiles, books, drugs, hotel accommodations, and many other things which are advertised in reputable medical journals. It would cost you nothing to inquire of those from whom you contemplate making purchases whether or not advertisements are carried in this journal, and would be of benefit all around to patronize those who advertise with us when all other considerations are equal. In time this would lead to the advertising pages becoming a handy, monthly revised catalogue from which the subscribers' wants could be supplied with the least possible delay and inconvenience.

The columns devoted to book reviews are not conducted in a perfunctory way. From them the reader may learn in outline something of what is coming out in medical literature, and something of what the reviewer thinks of the output.

The editorial expressions have elicited a gratifying comment from many sources, and will continue to be conducted along the lines laid down in editorial number one, in December of last year. The department editors are the Journal's "Old Guard", constituting its strength and its reliance. Everything appearing in these columns will be useful, reliable and instructive, and much of it edifying.

We are not ashamed of the Journal

as it is: all of us will be proud of the Journal which will be put out when the programme here outlined is adopted to any considerable degree; and the resultant advantage to the doctors of North Carolina and their patients will be immeasurable.

Hospital Development.

For some months we have had under consideration the matter of publishing accounts of the development of the hospital idea and of individual hospitals in North Carolina and some of the neighboring States. We are so prone to accept things as they are as the natural and commonplace, that we soon cease to marvel at a development, or to even think of the state of affairs of a few decades ago.

Just to give you a contrast with a bang it is mentioned that thirty years ago St. Peter's Hospital was able to provide a patient with a private room, board and nursing for three to five dollars per week; and, if Dr. Geo. W. Pressley is to be believed, "Miss Mary Sharpe was superintendent, house-keeper, operating room nurse, special nurse, book-keeper, dietitian, and also answered the 'phone'!"

It seems to be a commonly held idea that the hospital is a well-nigh new thing. This is far from true. There are evidences that there were institutions for the insane and quarters for treating those otherwise sick, in connection with the temples of Saturn in Egypt, four thousand years before Christ. These clinics were maintained in Thebes, Memphis, Heliopolis and other cities. A religious revolution swept all this away.

In 260 B. C., the Buddhist Emperor Asoka founded many hospitals in Hindustan which are said by one modern writer to have been "worthy of comparison with those of modern times." A Brahman revolution destroyed this system and most of the hospitals; however, it is said that one at Surat is still functioning.

Harun-al-Raschid, who reigned over the Mohammedan world from 763 to 806, attached a college and a hospital

to every Mosque and established in Bagdad an asylum for the insane and many public free dispensaries.

In Christian Europe little was done toward providing care for the sick beyond some miserable accommodations for lepers (for the protection of the well), until comparatively recent times. There is evidence that different religious orders established wonderful hospitals in a few of the cities of Italy, some having two beds for each patient, and pipe organs for their entertainment.

According to a supposedly reliable record, at times (and it may have been the custom) the city of Edinburgh fed the inmates of its almshouse on meat which the city authorities had condemned as too putrid for sale to its citizens; a fairly modern carrying out of the spirit of the passage in the Mosaic law which forbade the eating of the carcass which had died of itself, or the selling of it to a brother; but allowed the sale to an alien!

The growth of the hospital idea in this country was very slow. Our population being largely rural there was little need for hospitals just to take sick and crippled beggars out of the street, and the almshouse institutions preponderated for a long while. Until well within the memory of men now living few entered hospital doors, who had homes, or could contrive to obtain treatment elsewhere. The military hospitals of the period of the War Between the States did not tend to diminish this feeling.

With the coming into general use of anesthesia, the discovery of the bacterial cause of disease, and the development of antiseptic surgery a kind of hospital began to spring up far different from the old pest house. That these had to live down the reputations of their predecessors is evidenced by the early custom of calling them "Homes," "Retreats" and "Infirmaries."

Now nearly every town of any size has a hospital of some sort or other; most of them with good physical equipment and supplying real needs. The road to this goal has been long, tedious

and laborious, and the journey often interrupted. Some account of the details of these journeys of many of the individual institutions will be published in

these pages from time to time, for the entertainment, the instruction and the marveling of their readers.

DEPARTMENTS

LABORATORIES

HARVEY P. BARRET, M.D., *Editor*
Charlotte

Bacillary Dysentery in Children

In spite of the fact that a number of workers, some few of them in the south, have demonstrated beyond doubt that bacillary dysentery is common in this country there seems to be widespread ignorance of the existence of this condition. Practically all of the work has been done on children. It has been shown that the common "summer diarrhea" of children is bacillary dysentery. This disease, called by various names, such as summer complaint, colitis, infectious diarrhea, etc., is especially common in the summer months and is the largest single cause of deaths among children under two years of age. The symptoms of bacillary dysentery briefly, are: sudden onset, anorexia, frequent vomiting, often convulsions, high fever, loose watery stools later containing blood and mucus, and often bloody mucus alone. Bacillary dysentery is a common disease in European countries especially in older people. In this country it seems to be rare except in children. Davison working in Baltimore and Birmingham found dysentery bacilli present in over eighty per cent of cases with bloody dysentery. Spence at the Babies Hospital in New York obtained 100 per cent of positive cultures using a different technique. Others have obtained similar high percentages of cultures of dysentery bacilli from cases of bloody dysentery in children. In North Carolina the writer has found about eighty

per cent of positive cultures in the cases of bloody dysentery examined. A larger percentage of positive cultures could be found in all these cases if it were practicable to obtain more than one specimen for examination from each case.

It seems incredible that in the light of all the bacteriological work done on this disease so little attention should be paid to its existence. It is not a reportable disease in this state nor is it in any other as far as I am able to find out. Except for isolated instances of work done by health departments in the way of cleaner surroundings and personal hygiene no work has been done in an effort at preventing this disease in children in this state.

In the last six years in North Carolina alone there have been nearly nine thousand deaths among children under two years of age from this disease alone. With the possible exception of pneumonia this disease is the highest single cause of death in children.

As this disease is so much like typhoid fever it would seem that vaccination as practiced in typhoid prevention would be a practical solution of the problem of its prevention. Unfortunately the local and systemic reactions from a subcutaneous vaccination of dead dysentery germs are so severe that efforts at vaccination by this method have been abandoned. During the past two years a great deal of work has been done in France on vaccination by mouth against bacillary dysentery. The results have apparently been very satisfactory. Enlows working at the Hygienic Laboratory in Washington has

shown that a rather high degree of protection is afforded animals vaccinated by this method. The writer, working in Charlotte, aided and encouraged by Enlows, has tried out this method on a small scale this summer with apparently hopeful results. A detailed report of the results of this work will be given later. It is the earnest hope of the writer of this article that an opportunity will be given next spring and summer to carry out this work on a large scale in some community or mill village where the work and its results can be very carefully watched and controlled. He is especially anxious to get in touch with some county health officer in a district where the disease is very prevalent and where he can be assured of cooperation both on the part of health officials and patients.

SURGERY

A. E. BAKER, SR., M.D., *Editor*
Charlotte
Cancer

Our knowledge of cancer is excellent, so far as it goes. Because we are in doubt as to the exact exciting factor, we should not be too pessimistic. The discovery of the bacillus of tuberculosis as the cause of consumption did not bring a cure for tuberculosis. We should not emphasize our failure to learn the exact cause of cancer to the extent of failing to make use of the wealth of knowledge which we possess concerning the disease itself. It is something to know that it is not hereditary in the ordinary sense, although certain families may have tissues more subject to chronic irritation than others. Also it is a comfort to know that cancer is not contagious.

Elimination of all sources of chronic irritation, early diagnosis, and removal of the growth while it is still local, are the salient points in the prevention and cure of cancer at present.

The results of modern surgical operation for the removal of cancer can be improved by the use of x-ray and ra-

dium, in the hands of a competent specialist, especially in the more cellular growths.

If the cancer cell is compared with the normal cell, it is found that the normal cell, as an oxidizing mechanism, not only converts energy into growth, but also provides for function. In other words, a normal cell balance is established between the amount of nucleus and the amount of cytoplasm. The cancer cell, by reason of its enormous nuclear development, converts all the energy derived from the oxidation of its nourishment into growth, without function, and in this growth it takes its nourishment from the normal cell.

The bipolar hypothesis of Crile is one of the latest with regard to the causation of cancer. Crile postulates that the nucleus of the cell is the positive pole, and the cytoplasm the negative pole, but we are left in the dark as to what disturbs the electric mechanism.

Broders, in formulating his index of malignancy, studied the microscopic cellular pathology of squamous-cell cancerous growths from 1,628 patients, without reference to the case histories. He divided the cases into four groups, representing grades of cell maturity: Grade 1, cancers in which 75 per cent of the cells were differentiated, and 25 per cent were embryonic, or undifferentiated; Grade 2, cancers in which the differentiated and undifferentiated cells were about equal; Grade 3, cancers in which only 25 per cent of the cells showed evidence of differentiation, and 75 per cent no differentiation; and Grade 4, cancers in which none of the cells approached the normal. The ultimate results following operation were then investigated, and it was found that in Grade 1 good results were obtained in 92 per cent of the cases; in Grade 2, in 62 per cent; in Grade 3, in 25 per cent, and in Grade 4, in only 10 per cent. This method of grading malignancy was then applied to a larger series of cases, and the findings confirmed. Broder's work confirms, pathologically, what has long been known clinically that cancer varies greatly in ma-

lignancy, and its curability depends on the nature of the cells which compose it, as well as on the stage of development.

In performing the modern operation for cancer, the extent of the operative procedure and the prognosis depend on the microscopic diagnosis. Suspicious tissue can be removed and studied microscopically while the operation is in progress, and the surgeon can know, within a few minutes, whether or not a growth is malignant and the degree of malignancy.

Cancers of the external tissues of the body do not seem to have increased in the same proportion as those of the internal tissues. If cancer is on the increase, there is no reason why cancers of the external part of the body should not increase proportionately. However, our new diagnostic means of discovering diseases of the concealed organs of the body have increased greatly in recent years. The x-ray, the various "scopes," and the exploratory incision enable one to recognize diseases formerly undetected. The recognition and elimination of known causes of irritation are aiding in the reduction of external cancers. It has been found that irritation from gall stones often leads to cancer of the gall bladder. Gallstones are now removed earlier, and cancer of the gall bladder is diminishing. We must not depend too much on statistics. Sir Berkeley Moynihan says that statistics can be made to tell anything, even the truth. While it may be that cancer is on the increase, there is greater alarm over the increase in cancer among the statisticians than among the clinicians.

We hear little of the thousands of persons who have been cured of cancer by operation, but the deaths are heralded so widely that the laity have become frightened and postponed examination until their condition is hopeless.

(Abst. Mayo Paper on Cancer, *Indiana Med. J.* Sept. 25, 1924.)

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
Charlotte

Vertebral Epiphysitis

Pyogenic inflammation of the various epiphyses of the bones of the body occurs more frequently than it is generally given credit for occurring. The disease is seen in children and has a pretty well defined train of symptoms. It's behavior is usually rather classical, but it gets called everything from rheumatism and growing pains to bone tuberculosis and malignancy. Like the blind men of Hindustan, though, many times—even then—we may be "partly in the right but really in the wrong." Epiphysitis really simulates at times in its incipency these graver diseases, but the elimination of focal infection and a little rest removes the inflammation so promptly that it clears its own skirts of behaving like its neighbors.

When friends speak of curing a tubercular joint in their practice by this or that short route they have really been dealing only with a simple pyogenic epiphysitis. Tubercular organisms come to stay longer and destroy more. The epiphysitis may be as transient as a coryza, tonsillitis, or other common childhood complaint—to many of which it is close akin. It can be looked out for in a debilitated child following any infection or chemical poisoning and may occur singly or in multiple bones. The occurrence of this pathological entity in the epiphyses of the long bones is fairly common to all of us, but its occurrence in the vertebrae is a little rare and one must have his gunning eye out to catch it.

Calve in the January issue of the *Bone and Joint Journal* reports one of his own cases of vertebral epiphysitis and one of Brackett's, and recites the similarity to Potts' disease.

Lewin, of Chicago, reviews the limited literature on the subject and reports a case in the August issue of *Annals of Surgery*. The observations of both Calve and Lewin are in substance the same and are as follows:

"Historical—Under the term *kyphosis dorsalis juvenilis*, Scheuermann, of Copenhagen, in 1921, described this unusual affection of the spine."

"Literature—The literature on this subject is very scant. In the most recent article by Calve, two cases are described."

"Embryology—There are two epiphyses for each vertebral body; one at the upper pole and one at the lower. These unite with the body at about the eighteenth year, therefore epiphysitis cannot occur after this period."

"Etiology—The etiology of this condition is found in the following factors: Firstly, infection locally and remotely; secondly, circulatory disturbance in the nature of embolism, thrombosis, etc.; thirdly, trauma both internal and external, and fourthly, glandular disturbance, affecting bone growth and development."

"Pathology—The pathology is that of an epiphysitis."

"Symptoms and Signs—The signs of an epiphysitis are similar to those of an early tuberculosis, viz., limitation of motion, muscle spasm, military attitude, pain, night cries, tenderness, and sensitiveness to jarring."

"Roentgenography—Antero-posterior and lateral views should be made and reveal characteristic involvement in region of epiphysis. No exudate is seen."

"Diagnosis—The direct diagnosis is based upon the findings outlined above. The differential diagnosis is important especially from the standpoint of prognosis."

The conditions to be considered are especially tuberculosis, rickets and trauma. Tuberculosis is manifested by limitation of motion, muscle spasm, pain, night cries, roentgenographic evidence; i. e., haziness and diminution of intervertebral space, destruction of bone in anterior portion of vertebral body exudate, deformity, abscess, etc. Rickets is characterized by a long, round kyphos, which is easily reducible, other evidences of rickets, such as rosary, square head, irregular broad epiphyses,

pot belly, Harrison's groove, bone deformities, i. e., knock-knees, bow-legs, etc., disturbed dentition and altered blood chemistry. Traumatic spine conditions are diagnosed by a history of injury, examination of the spine and roentgenographic studies."

"Prognosis—The prognosis is excellent if proper treatment is instituted."

"Course—The course is comparatively short. Undoubtedly many cases reported as cured tuberculosis of the spine were really cases of epiphysitis."

"Conclusions—Vertebral epiphysitis is a definite pathological entity and is analogous to Legg-Calve-Perthes disease of the hip; to Osgood-Schlatter's condition in the upper tibial epiphysis; to Koehler's tarsal scaphoiditis; to Freiberg's infraction of the metatarsal head, to carpal epiphysitis, and to apophysitis of the os calcis."

MENTAL AND NERVOUS

JAMES K. HALL, M.D., *Editor*
Richmond

On Cheerfulness at Meals

On the propriety of grace before meals I am disposed to leave all discussion to the theologians and to Charles Lamb, dead these many years, because I assiduously avoid religious argumentation in these troublous evolutionary and revolutionary times. Thankfulness, I can easily imagine, wells up in the breast of every hungry human being who finds himself confronted by a palatable and nutritious meal, even though his feeling of gratitude may not voice itself in audible articulation.

But I am minded to enter upon a dissertation having to do with the physiological importance of cheerfulness during the hour of meal, and to offer certain reasons for asserting that the dining room should be the cheeriest room in the entire home. Numerous experiments upon various animals and countless observations upon man and many other animals have established irrefutably the fact that appetite, digestion and assimilation are influenced favor-

ably by a comfortable and happy state of the emotions. The more cheerful and optimistic and happy one can feel at the time of eating the more one is inclined to make a festive occasion of the meal and the more thoroughly and comfortably the meal will be digested with consequent upbuilding of the body tissues. The dining room should be well lighted and well ventilated; its windows should look out upon grass and shrubbery and blossoming flowers; its walls should be hung with gay and cheerful pictures, and the furniture should be substantial and pleasing to the eye. Thin, attractive china, burnished silver, fragrant flowers and snowy linen all tend to add palatability to the best food. The mental attitude of the diners should be that of those who have come to partake of a feast. Cares and anxieties and worries and troubles and apprehensions should not be brought within the room. The conversation should not relate to the troublesome problems of the day. Faults of the neighbors should be appraised at some other time, and temperamental defects of the various members of the family should wait for later analysis. Cheerfulness and joyousness and comradeship should go happily along with the ingestion of the food. Cheerful music is, I doubt not at all, an aid both to appetite and to digestion. The lilt of an orchestra and even the somewhat raucous notes of a worn victrola tend to drive care from the mind.

And finally, though I say so in trepidation, I am certain that the gentle feeling of mild exhilaration and the pleasant intimation of euphoria that comes after a small glass of mellow wine have a beneficent effect throughout the entire serpentiginous stretch of the alimentary canal and all its co-working organic neighbors. Wine may be a mocker and the present day use of it damnably unconstitutional but the comforting glow that comes from a taste of it just before the evening meal makes of hunger a friend and digestion an unconscious joy. Personal approach to teetotalism and Socratic obedience to

the law do not blind me to physiologic and psychologic facts.

I have observed, not infrequently, that the solemnity of the divine thanks rendered at the beginning of the meal has established a sort of funereal state of mind in the diners that lasted throughout the course. Repression should have no place at the festive board. Let the children there laugh and chatter, and their elders revel in enjoyment of the fruits of the earth.

On the Cause of Paralysis Agitans

In the Annals of Clinical Medicine for August of the present year Walter Freeman, of the staff of Saint Elizabeth's Hospital in Washington City, makes a contribution to the Pathology of Paralysis Agitans. He reviews briefly the symptomatology of this dreadful condition, the mask-like expression, stooping posture, "pill-rolling" tremor of the fingers, suppression of the tremor during voluntary movements, festination, retropulsion, salivation, and the general bodily rigidity. Formerly this condition was seldom seen except in the comparatively aged, but since the prevalence of lethargic encephalitis, or so-called sleeping sickness, paralysis agitans has been much more frequently observed and many cases have been seen in rather young people. Paralysis agitans was described first by James Parkinson more than a hundred years ago, and on the centennial anniversary of his classic description of the condition a few years ago the Archives of Neurology and Psychiatry republished in full his account of the malady. During all those hundred years the description of the condition by Parkinson was not improved upon and little light was thrown upon the cause of the disease. But almost coincident with the centenary of Parkinson's observations Tretiakoff was brought to the conclusion that degenerative changes in the substantia nigra constitute the anatomic changes underlying the symptomatology. Prior to the theory advanced by Tretiakoff various other investiga-

tors had brought forward many theories in an effort to account for the condition—changes involving structures as widely separated, for instance, as the brain and the voluntary muscular system.

Freeman reports post mortem microscopic investigation of three patients that died in Saint Elizabeth's Hospital of intercurrent pneumonia, each of whom had the condition that had been diagnosed as paralysis agitans. In two of the patients the paralysis agitans followed lethargic encephalitis, and in one patient, an old man, the Parkinsonian condition was of the so-called idiopathic type. In the investigation of the brain of each individual Freeman found degenerative changes in the substantia nigra and to this pathologic alteration in this substance he feels justified in attributing the physiologic changes that take place in paralysis agitans. This observation of Freeman is in confirmation of the theory advanced by Tretiakoff.

The mechanism—anatomic and physiologic—underlying the production of paralysis agitans is not understood, but Freeman thinks the motor fibres passing through the substantia nigra may have their origin in the cerebral cortex, and that they may carry to the voluntary muscles impulses which inhibit contraction. Any interference with the transmission of such impulses by degeneration of the fibres which convey them would consequently result in muscular rigidity, such as is seen in the condition originally described by Parkinson a hundred and more years ago. The substantia nigra is a small collection of pigmented multipolar cells situated in the base of the brain on either side near the origin of the oculomotor nerve. Such an explanation of the cause of the malady would put the disease out of therapeutic reach.

Dr. Freeman is, by the way, a grandson of Dr. William W. Keen, the eminent surgeon of Philadelphia; and the son of the late Dr. W. B. Freeman, a well known throat specialist of the same city.

EAR, EYE, NOSE AND THROAT

C. N. PEELER, M.D., *Editor*

Charlotte

Direct Blood-stream Infection Through the Tonsils

"Clinical experience has definitely established the fact that a chronic focus of infection in the abdominal organs, teeth, the tonsils, the nasopharynx, or the accessory nasal sinuses, may give rise to general systemic disorders. The local manifestations in the eye, the optic, the auditory, or other nerves, the kidney, the circulatory system, or the joints are often more prominent than are those of the focus from which they originate." Thus, Drs. Tanaka and Crowe, of the Johns Hopkins Hospital, begin a very interesting article which appeared in the Archives of Otolaryngology in the May issue of this year.

Of the different lesions mentioned above there may be two possible explanations; first, the absorption of toxins from the primary lesions or, second, the passage of living bacteria into the blood stream. They have shown from careful study of the tonsil and illustrated with beautiful cuts that it is entirely possible for bacteria to pass from a chronically diseased tonsil directly into the blood stream.

In the description of the blood supply to the crypts of the tonsil they emphasize the anatomic fact that the capillaries are located just beneath the epithelium of the crypts. There are also villus-like protrusions into the crypts, and in the center of these processes are an arteriole and one or more small veins. In chronic tonsillitis the epithelium lining the crypt becomes destroyed and a dense accumulation of inflammatory cells appear in surrounding tissue.

The article is summarized and closed by stating the following facts:

1. "The epithelium that lines the crypt in a normal tonsil has a rich capillary blood supply; the large collecting veins that surround each crypt lie just under the basement membrane.

2. A destruction of this epithelium,

in whole or in part, is the most common microscopic finding in chronic tonsillitis. Often the lining epithelium is replaced with scar tissue; occasionally definite ulcers are found. In either case, large numbers of blood vessels have been thrombosed, and they afford a pathway for the entrance of bacteria into the blood stream."

RADIOLOGY

JOHN D. MACRAE, M.D., *Editor*
Asheville

Interpretation of Chest Films: Pathological Changes

An x-ray film is a record of the varying densities in the object depicted. The chest films show characteristic shadows in health, with which we are familiar. They are produced by the mediastinal viscera; the lymph nodes; thick walled bronchi; blood filled vessels and connective tissue at the hilum and the trunks radiating to the different lobes; all surrounded by parenchyma of uniform low density.

Lung disease creates abnormal densities which produce shadows in the x-ray films from which we draw conclusions as to the pathological processes responsible for them. Their peculiar forms have been determined by correlating radiographic findings with the results of physical and clinical examinations and post mortem studies.

The location in the lung as well as the character of the shadow is important in interpretation.

The patient's age will have a great deal to do with determining what certain shadows represent.

Abnormal densities are produced by infiltration, fibrosis, caseation and calcification. Also there are conditions characterized by low density. Then there are various neoplasms.

1. Infiltration of lung tissue is recognized by shadows which are hazy and indistinct of outline. The location and form of such shadows vary with the pathological conditions. For instance the infiltrative process in lobar pneumonia may be intense to the degree of

consolidation by reason of cellular debris, exudates and transudates filling the air cells, and may be sharply defined at the margin of the affected lobe. The infiltration of an early tuberculous lesion involves a small area, generally in the periphery of the lung. At first so minute as not to be recognized in x-ray films because it is limited to a primary lobule, then becoming visible as several secondary lobules are involved. The first x-ray evidences are fan-shaped shadows among the terminal branches of trunks to the upper lobes. As the disease progresses by invading new areas in an irregular manner and at different periods in point of time, the shadows become hazy and flocculent or mottled, maintaining the more or less cone shape in individual lesions till their extent is great enough to cause a loss of this characteristic shape in the multitude of processes.

2. Fibrosis is denser than infiltration. It is recognized by shadows which are striated in character. Striae are seen forming in the midst of the flocculent shadows of infiltration. These fibrous bands tend to radiate from the hila and represent healed or arrested fibroid tuberculosis.

3. Caseation is denser than infiltration or fibrosis. Conglomerate tubercles caseate when the air cells involved are packed with exudates and debris which having no new blood vessels do not become organized and rarely become absorbed. They are seen as clusters of dense nodules grouped about a bronchus and are recognized in the x-ray films as groups of small dense shadows often located in the lung of the side opposite to that in which old destructive lesions occur, where they seem to be the result of tubercle laden pus and sputum transferred from a diseased focus by cough and aspiration. Also extensive areas of tuberculous pneumonia are seen to become caseous and these processes cast dense, splotchy shadows which may be located in any part of the lung. Such processes are common in advanced pulmonary tuberculosis.

4. Calcification, as the word implies, is a process of calcium deposit and nat-

urally it is very dense when compared with infiltration. Shadows representing calcified lymph nodes in the lung roots are the commonest and most characteristic examples of calcification in the lung. Caseating conglomerate tubercles are sometimes seen to become like small particles of chalk and even to become bony in structure. When caseous lesions fail to liquefy they sometimes are the seat of deposits of lime salts, which is calcification and is represented in x-ray films by its very dense clean-cut shadows.

5. Low densities are the result of cavitation. The caseating areas undergo necrosis and liquefaction and the broken down material being expelled, the x-ray film presents areas free of any lung marking at all in the midst of splotchy or homogeneous dense shadows.

Some cavities present a homogeneous dense shadow in their most dependent part which represents an accumulation of fluid, easily recognized as such because of the horizontal upper margin.

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*
Charlotte

Calcium

Diet is a borderline subject of equal interest to dentist and physician. For all time the dentist has worked with reasonable success to combat the ravages of mouth disease, especially pyorrhea and caries after they develop.

The recent work of such men as Dr. Howe and Dr. E. V. McCollum has aroused a new interest and hope, in the subject of diet.

To quote from Dr. William Howard Hay, of Buffalo, in *Oral Hygiene*, "The delicate structures of the mouth, the gums, mucous membrane, tongue, even the teeth, are perhaps earliest of all the visible parts of the body to show failing nutrition, nutritional change that is below the normal, and for this reason there is logic in the challenge of Dr. Mayo.

If these changes occur earliest and plainest in the mouth then the dentist, rather than the physician is the man who should first recognize the red light of warning that danger impends, and he is the one to break this news to the patient.

The physician is not called in till something far more grave or annoying than dental caries or gingivitis or coated tongue or tooth abscess occurs, and even Rigg's disease is looked upon as a local condition, within the field of the dentist wholly; yet every one of these conditions is lurid evidence of nutritional deficiency that has gone far and should be so regarded."

The direct interest of the dentist in nutrition is limited to the mouth. Quoting O. Henry, D.M.D.; *London International Jour. Orthodontia, Oral Surgery and Radiography*, "From good in general, we derive an adequate mineral supply; only three elements need careful consideration, calcium, phosphorus and iron. Calcium is the one that interests us most as dentists. The supply of calcium must be taken in the food each day for the needs of the day. An abnormally large amount in one day will cause the superabundance to be excreted, while its opposite, an abnormally small amount, causes a ravage, that is, the necessary amount to keep the body processes going will be drawn from the bones, if not supplied in the food each day. "This is what is called keeping the body in calcium equilibrium, supplying in the food of each day the calcium used for that day. This is clearly illustrated in the classic experiment of the pigeon fed on a calcium free diet."

"An analogous situation exists in the case of the pregnant mother. Bunge says: 'Calcium is the constituent which must be observed in her diet, lest she withdraw it from her bones and teeth.' Luske says: "This is especially so in the last ten weeks of pregnancy." "The child when he comes to us is building bones, is building new teeth; the calcium need of the child is tremendously high, and is a chief concern in the diet."

While the foregoing statement is

true when the individual is functioning normally, the situation becomes more involved in that condition so common in modern life, namely the rachitic child."

"Not believing that diet alone is responsible for rickets, investigators in the U. S. and England have induced rickets in animals by lack of sunlight and lack of exercise, the diet being adequate; and have in turn restored the animal to normal health by sunlight or codliver oil, and by releasing the animal from its cramped position.

The common factor in these methods has been proved to be the presence of phosphorus in its relation to calcium. A diet rich in calcium but lacking in phosphorus has failed to cure rickets: when to these cases either sunlight or codliver oil, that is phosphorus-bearing elements, was supplied the cases were cured. Less exaggerated cases can be cured by vitamin A diet; that is, butter fat. Therefore, according to our present knowledge, we are justified in accepting the calcium-phosphorus balance in the diet as the principle which determines calcium deposition." An adequate diet for a child is:

1. One quart of milk every day, taken as a drink and cooked in the food. Recent experiments have shown that with less than this amount, there is not sufficient deposition of calcium, while with more than one quart the excess calcium is excreted.

2. Two vegetables a day, exclusive of potato (the fresher the vegetable the greater the supply of vitamins). The leafy vegetables are the most important and should appear four times a week.

3. Fresh fruit at least one piece a day.

4. Cereals in rotation, taken as breakfast foods and addition to soups using preferably the whole grain, bread included.

5. With the protein supplied by one quart of milk a day, one other protein a day in the form of fish, meat, eggs or legumes is sufficient. If legumes (peas beans and lentils) are used as the source of protein they should be used in rotation because of their supplementary value, that is, each one does not contain all the essential amino-acids necessary for tissue building.

The excessive use of sweets should be guarded against, for experiments have shown that sugar used in too great amounts acts against calcium deposition."

With symptoms of nutritional deficiency staring him in the face, it is not difficult for the dentist to advise a patient as to diet. But the welfare of the patient demands correct advice, and at the present time the more nearly correct advice can be given through the cooperation of the dentist and physician.

"It is not among the impossibilities that in the very near future both the physician and the dentist will be paid to keep patients well, rather than to help them escape the penalties of error after these become evident."

A lady remarked to a dentist that, "physicians work very hard for you when you are seriously ill, but it is very hard to get them to do anything for you if there is nothing much the matter." The look of satisfaction on the dentist's face lasted only a moment as she added, "it is the same with the dentist."

The first thought is not new to the Chinese except the penalty for failure was the loss of a head.

The second thought is a common one with the laity and more rather than less accurate, if we speak gently.

"It is a humanitarian, an altruistic thing to do to pull one's neighbor from the pit into which he has fallen, but is it less so to show him the way that will miss this same pit?"

REVIEW OF RECENT BOOKS

A TEXT-BOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Eighth Edition, thoroughly revised. Octavo of 752 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1924.

The author advises that bacteriology be made a part of every scientific course; for, as he so well says, it "presents certain aspects which tend to widen the outlook upon a variety of human interests." The broad scope of this science is emphasized.

A chapter of particular interest is that devoted to the effects produced by bacterial growth,—the production of heat, light, pigment, acid and alkali.

"Any strict dividing-line between animals and plant is an entirely arbitrary one." The advantages of the classification of bacteria proposed by the Society of American Bacteriologists are said to be many. Sharp distinction is made between bacteremias and toxemias. Diphtheria and tetanus are illustrations of primarily toxic diseases.

Immunity's relativeness is well stated at the very opening of the discussion of this subject.

"The virulence of different strains of streptococci varies widely, but the factors on which such virulence depends have not been discovered." They are more often than any other microbes found in mixed or secondary infections.

The bacillus tetani gives way to the clostridium tetani. Much consideration is given to the subjects of gas gangrene and botulism.

Under the tubercle bacillus are excellent discussions of matters of such clinical interest as powers of resistance, channels of infection, predisposing factors and the different tuberculin reactions.

There are instructive chapters on the filterable viruses, the bacteriology of milk and milk products, bacteria in the arts and industries and bacterial diseases of plants.

PREVENTIVE MEDICINE. By Mark F. Boyd, M.D., C.P.H., Member of Regular Field Staff, International Health Board of Rockefeller Foundation; formerly Professor of Bacteriology and Preventive Medicine in the Medical Department of the University of Texas. Second Edition, Revised. Octavo volume of 429 pages with 135 illustrations. Philadelphia and London: W. B. Saunders Company, 1925.

Undoubtedly, the foreword says truly that physicians are neglecting their opportunities in preventive medicine, and there is a strong probability that, if this state of affairs continues public sentiment will demand an extension of the powers and enlargement of the personnel of the public health service.

Attention is called to the preventive measures incorporated in the Mosaic laws and to the failure of the contemporary Gentile races so to do. An obvious error credits Oliver Wendell Holmes with first calling attention to the contagiousness of puerperal fever. Holmes' own article credits nearly a hundred foreign authors with the idea, in many instances supported by case reports. Quoting Holmes: (from memory) "If any be so far moved at the recital of these dreadful events as to ask for some word of indignant remonstrance . . . let me remind them that such words have been uttered by those who speak with an authority which I could not claim!"

The quantitative factor in infection is given importance. A map from U.S.P.H.S. pamphlet No. 30 illustrating the incidence of venereal disease among the second million men inducted into the Army gives nearly all our southern States in black. The discussion of the proper attitude of the governmental agencies toward prostitution is purely dogmatic.

Of influenza; "No methods of artificial active or passive immunization are at present known." No mention is made of the possibility of poliomyelitis being transmitted by insects. Much importance is attached to the mask as a means of protection for the nurse, physician and others in intimate contact with infected persons. Excreta disposal, water and milk have chapters. Proper sanitation of swimming pools has become a matter of considerable importance. Excellent chapters deal with insects as vectors of infective agents and diseases transmissible by insects.

Simple goiter is classed with beriberi, scurvy and pellagra, as a deficiency disease. Eugenics is discussed rather tentatively. Terminal chapters deal with the hygiene of childhood, air personal hygiene and vital statistics. An unexpected and welcome statement is: "Exercise should never be excessive or potentially injurious. Of this the individual is the best judge."

AMERICAN ILLUSTRATED MEDICAL DICTIONARY (DORLAND). New (13th) Edition, Revised and Enlarged. A new and complete Dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with the Pronunciation, Derivation, and Definition. Thirteenth Edition, Revised and Enlarged. Edited by W. A. Newman Dorland, M.D. Large Octavo of 1344 pages with 338 illustrations, 141 in colors. Containing over 2500 new words. Philadelphia and London: W. B. Saunders Company, 1925.

Most persons appear to be rather ashamed to be seen using a dictionary. Probably they have never run across the statement of one of the greatest of English scholars to the ef-

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fect that this was the book which supplied him with the most interesting as well as the most valuable reading.

So many new words have been added to the vocabulary of Medicine in the past few years, that, without a very recent Medical Dictionary one is seriously handicapped in his reading of this branch of literature.

Dorland has been standard for many a year, and the new edition is well worthy of former ones. A special feature is a series of tables numbering nearly two hundred and embracing, to pick a few at random,—acids, alcohols, fruits, casts, catheters, fevers, grafts, hemorrhages, insanity, isotopes, ligaments, murmurs, plexuses, poisons, pulses, reactions stains and staining methods, symptoms syndromes, tests, theories, tumors and zones. If a word of adverse criticism be in order the reviewer would suggest that it might be better to use English equivalents of Greek letters in giving the derivation of words from the Greek; but it is recognized that it might be well answered that there are no exact equivalents, and moreover, that those who are really interested understand the Greek characters.

A MANUAL OF GYNECOLOGY. By John C. Hirst, M.D. Associate in Obstetrics, University of Pennsylvania. Second Edition, Revised. 12mo of 508 pages with 195 illustrations. Philadelphia and London: W. B. Saunders Company, 1925.

Many of the chapters have been rewritten and much new material has been added. All new tests of proven efficacy are carefully described.

The chapter on the endocrine glands is said to have avoided all academic discussion and to be written so as to be of most use to the practitioner or the student.

There is a short chapter on *backache* in which are tabulated eighteen causes for this common and, often, baffling symptom. One of the very commonest of these is given as constipation.

The pages devoted to organotherapy are quite entertaining. The note is one of marked conservatism with the exception of the statements as to those of universal acceptance. Of one widely touted it is said, "The use of ovarian extracts is not dangerous."

PHYSICAL CHEMISTRY IN BIOLOGY AND MEDICINE. By J. F. McClendon, Ph.D., Professor of Physiologic Chemistry, University of Minnesota Medical School, and Grace Medes, Ph.D., Assistant Professor of Physiologic Chemistry, University of Minnesota Medical School. Octavo of 425 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1925.

The preface states outright that it is intended for research workers in biology and medicine, and in no way partakes of the nature of a text. It is recommended that certain books be studied for stimulating interest in this line of work. Among the subjects of

these books are "Elements of Differential and Integral Calculus," "The Mathematical Theory of Electricity and Magnetism," and "The Electron." This is mentioned by way of indicating the quality of the work.

Many symbols are made use of, but they are kindly defined in a table. The protein molecule is discussed in a manner understandable to those not so highly trained. Osmotic membranes, surface tension and absorption are of great practical interest because of their relationship to edema; hydrogen ions and buffer values, because of the much discussed acidosis; thermochemistry in the living body, because of our employment of clinical calorimetry.

OLD AND NEW VIEWPOINTS IN PSYCHOLOGY. By Knight Dunlap, Professor of Experimental Psychology in the Johns Hopkins University. The C. V. Mosby Company, St. Louis, 1925.

This volume contains three public lectures delivered at the Johns Hopkins University, and two papers read before the Southern Society of Philosophy and Psychology.

The titles are attractive indeed: Mental Measurements, Present-Day Schools of Psychology, Psychological Factors in Spiritualism, The Psychology of the Comic, and The Reading of Character from External Signs. Seldom do we see such a list of subjects, each of which is of tremendous general interest, and dealt with a rational manner.

A book of this kind from a trust-worthy source is much needed for its influence in helping to counteract the pernicious influence of Novelist Conan-Doyle, Scientist Lodge, and the rest of the ghost-ridden.

In opening the fourth chapter the author says, "I hope no one is reading this chapter under the supposition that there will be something humorous in these pages; for then indeed the situation would be comic, and the joke would be on the deceived reader." This sentence strikes the reviewer as about as neat a bit of humor as he has run across in quite a while!

The attempt is made to show a certain essential characteristic or ingredient of the comic. The most primitive kind involves suffering on the part of another. This may be physical or mental. Many of the successful comedians play largely on the pleasure audiences derive from witnessing one placed in an undignified situation. "Only the very serious, the very cultured are immune to this sort of amusement."

This book is warmly recommended (to be read for its mirroring effect) to the members of all Lodges, Orders, Fraternities, Sororities, Eating Clubs and Charlie Chaplin habitues,—and that list doesn't leave out many.

SOME FUNDAMENTAL CONSIDERATIONS IN THE TREATMENT OF EMPYEMA THORACIS, ILLUSTRATED, by Everts A. Graham, A.B., M.D. Member of Empyema

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Commission, U. S. Army; Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief, Barnes Hospital and Saint Louis Children's Hospital. This essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery in 1920. St. Louis. The C. V. Mosby Company, 1925.

Principles are given most consideration. Empyema following acute respiratory disease in the military camps afforded an enormous number of cases on which accurate records were kept and from which many valuable lessons were learned. Following the application of principles worked out during this epidemic, the mortality rate dropped from its truly appalling figure.

The sections are entitled—Pathology, Prevention of Chronic Empyema, Careful Attention to the Nutrition of the Patient and Discussion. The mechanical problems growing out of the varying intra-thoracic pressures are given greatest attention. In summarizing it is stated that: "The essential points of these new principles of treatment are: (1) Careful avoidance of open pneumo-thorax in the acute, pneumonic stage, (2) the prevention of a chronic empyema by the rapid sterilization and obliteration of the infected cavity, and (3) careful attention to the nutrition of the patient."

This disease gravely concerns every general practitioner and surgeon, and, to a less extent every doctor. Certainly the surgeon can not afford to be ignorant of Graham's teachings on Empyema.

METHODS IN SURGERY. Used in the Surgical Divisions of Barnes Hospital, St. Louis Children's Hospital, and Washington University Dispensary. Including outlines for Case History-Taking, Preoperative and Postoperative care of Patients, routines, diets, etc. By Glover H. Copher, M.D., Instructor in Surgery, Washington University School of Medicine; Clinical Assistant to Barnes Hospital; Surgeon to out-patients, Washington University Dispensary; visiting Surgeon, St. Louis City Hospital. St. Louis. The C. V. Mosby Company, 1925.

This book is prepared primarily for the guidance of house officers and students at Washington University School of Medicine working in the surgical divisions of the hospitals of this school and should be of great service to all those lacking acquaintance with the very latest developments in surgical methods.

Its very broad and useful nature may be suggested by quoting from its first page: Refer any requests for information by reporters, lawyers or insurance agents to the business office; do not smoke or wear a hat in the rounds, laboratories or any other part of the hospital; the utmost courtesy is to be shown visiting doctors. Minute directions are given for the making of records.

An x-ray department rule forbids the showing of plates to patients either while in or after leaving the hospital, unless so requested by the attending physician. Specific instructions are given on isolation, the use of hot water bottles, the administration of enemata, spinal puncture, tuberculin test, baths, plaster casts and practically every useful diagnostic and therapeutic procedure.

The operating room routine is described in emphatic terms. In hand disinfection "The desired end is attained by four-fifths mechanical effort and one-fifth chemical action." Thus it is again emphasized that there is no royal road to the desirable. Lavage retains its place as the sovereign remedy for post-operative nausea and vomiting. Spartan prohibition of morphine is not advocated.

Different routines for different classes of cases are carefully outlined.

This little book contains much information of the life-saving kind and will well repay intense study by both the neophyte and him in whom long familiarity with the remarkable power of the human constitution to resist insult has bred a certain amount of contempt for painstaking care.

PERSONAL AND COMMUNITY HEALTH.

By Clair Elsmere Turner, Associate Professor of Biology and Public Health in the Massachusetts Institute of Technology, Associate Professor of Hygiene in the Tuft College Medical and Dental Schools, sometimes Member of the Administrative Board in the School of Public Health of Harvard University and the Massachusetts Institute of Technology, Fellow American Public Health Association, Major, Sanitary Corps, U. S. A. (Reserve) Illustrated. St. Louis. The C. V. Mosby Company, 1925.

Prepared for students, this volume should be intelligible to the average layman. Several of the earlier chapters are written in very general terms.

It is refreshing to find so unusually sane a statement on diet as that to the effect that if one could choose freely his natural taste would be a reliable guide. The influence of the emotions on digestion is described at length. More attention is paid to the undesirability of undereating, than in most texts.

Exercise is extolled in the warmest terms as of benefit all along the line. The section on bathing is qualified with such obvious advice as that certain things should "not be done too frequently," or that certain baths are to be advised "if taken under proper conditions."

Alcohol is given a swat in passing. Tea and coffee in reasonable quantities are said to be harmless to most adults. Hereditary influences and prenatal care are treated of in a concise manner. "The Child's Ten Commandments To Parents," are quoted from the American Journal of Public Health.

A long chapter is devoted to disease prevention. The three great plagues are given

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SYMPTOMS OF VISCERAL DISEASE.

A study of the Vegetal System in its Relationship to Clinical Medicine. By Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P. Medical Director, Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California; Author of "Clinical Tuberculosis," "Tuberculin in Diagnosis and Treatment," "Muscle Spasm and Regeneration," etc. St. Louis. The C. V. Mosby Company, 1925.

It is considered that the experience with the first and second editions has justified the existence of this unusual type of book. Some have accused North Carolinians of a decided penchant for aphorisms, so this one on the flyleaf should have an appeal: "There is a patient who has the disease, as well as the disease which has the patient."

The evolution of modern medicine is traced from the age of mysticism, through that of empiricism to our own times of science; from the general practitioner, through the specialist, to that which is past its dawn,—that of the well-balanced internist.

The one outstanding need of modern medicine is said to be accurate clinical observation and interpretation. The greatest developments are to come from the study of **functional pathology**. Much attention is paid to the chemical control of body activities. The psychic influence is not neglected. The significance of the different "nervous systems" is elaborated. Symptoms of disease are classified as: symptoms due to toxemia, symptoms due to reflex causes, and symptoms due to the disease *per se*.

There is a chapter on segmentation of the body to illustrate and explain the relationships between the sympathetic and the spinal nerves. Many different classes of reflexes and syndromes are described. The various organs and their diseases are gone into carefully, always first minutely describing the innervation in each case.

Naturally it follows that the book stimulates thought, and is most pleasing and instructive to those who wish to understand.

GYNECOLOGIC UROLOGY. By Lynn Lyle Fulkerson, A.B., M.D., F.A.C.S. Assistant Professor of Gynecology, New York Post Graduate Medical School; Instructor in Obstetrics and Gynecology, Cornell University Medical School; Surgeon Cornell University Medical School Clinic; Associate Gynecologist Lutheran Hospital of Manhattan; Assistant Attending Gynecologist, New York Post Graduate Hospital; Fellow of the New York Academy of Medicine; Fellow of the American Urological Association. With 166 illustrations including 86 original and 14 color plates. Philadelphia. P. Blakiston's Son and Company, 1012 Walnut Street.

The preface states that though there are many books dealing with genito-urinary dis-

eases in the male no small work exists which presents the essentials of gynecologic urology. A history form is given which is designed for taking the record of a woman patient suspected of urological disease.

Abnormalities in the urinary findings are described with lists of possible explanations following. It is a bit inconsistent to write "hematuria" and "haemorrhagic." The chapter dealing with instruments and their use is clear and detailed. The author describes a cystoscope and urethroscope of his own invention, the technique of their manipulation, and their possibilities. Over distention of the bladder is regarded as a factor of great importance in the production of cystitis and it is strongly recommended that all women be catheterized immediately before delivery of the fetal presenting part and at intervals of four hours afterward unless spontaneous micturition is instituted. Hexamethylenamine and acid sodium phosphate in combination are deemed very valuable.

Sharp differentiation is made between **nephritis** and **nephrosis**. It is stated that acute inflammation of the kidney never takes place, "through extension by contiguity along the mucosa from the lower urinary tract."

In the chapter treating of tuberculosis of these parts it is pointed out that "the bacillus tuberculosis attacks the kidney primarily, the ureter and bladder secondarily." Indigo-carmin is named as the best dyestuff used as a test of kidney function.

Dathermy and fulguration are important means of therapy. The indications, contraindications and the technique of urography and pyelography are described at length. There is a useful chapter on urinary antiseptics and another on surgical considerations.

The whole of the work is profusely and instructively illustrated.

Treatment of Gastric Ulcer By the Method of Duodenal Alimentation

In the treatment of gastric or duodenal ulcer by means of prolonged duodenal alimentation, A. L. Garbat, New York (Journal A. M. A., June 27, 1925), says that stress should not be laid entirely on the exclusion of food from the stomach. Great importance is attributed to the frequent and concomitant administration of antacids or alkalis by mouth before each duodenal feeding, in order to neutralize or prevent the gastric secretion which is almost regularly associated with the duodenal alimentation. The two tube method has shown that a reflux of duodenal feeding into the stomach occurs more frequently than is usually believed; this occurs with improper position of the tube, which cannot always be recognized, or with a patent pylorus of the stomach. Antacid therapy will help to minimize the disadvantages resulting from such regurgitation.

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CHARLOTTE

NORTH CAROLINA

NEWS ITEMS

The Coming Meeting of the Southern Medical Association.

The various committees appointed in connection with the meeting of the Southern Medical Association in Dallas November 9th, 1925, report very satisfactory progress.

It is especially gratifying to know that the hotel committee has already succeeded in having reserved for guests more than 1600 rooms in the leading and best hotels of Dallas. This insures you that no matter how great the attendance, each one will be comfortably and suitably provided with proper hotel accommodations. This settles a question which has not concerned the doctors of Dallas who are acquainted with local facilities, but which has been raised by prospective visitors.

For the first time in its history, the Association will have all its activities housed in one building. The new educational building of the First Baptist church on the corner of St. Paul and San Jacinto streets will be completed long before November and will have a sufficient number of assembly halls for the various section meetings. The large auditorium with its splendid acoustics gives ample room for all general sessions and the basement floor, easily accessible, will give more than enough room for all exhibits, commercial and scientific.

In connection with the Association's meeting in November, clinics in all branches will be conducted in all Dallas' splendid hospitals, which contribute largely to its rank as a medical center of the Southwest. The bed capacity in the larger hospitals alone is in excess of 1,200. Over \$8,000,000.00 has been invested in the hospital facilities; below is given some data on the different institutions located in the city.

Baylor Hospital and Medical School

The Baptist Memorial Sanitarium was opened in 1909, being enlarged in 1922 and the name changed to Baylor Hospital. It is the largest sanitarium in the city, having a capacity of 432

beds. One hundred graduate nurses and one hundred and sixty-five training nurses are employed.

The capital invested is in excess of \$3,000,000, the hospital being operated by the Baptist denomination of Texas.

While the main plant of the Baylor University is located at Waco the schools of Dentistry, Nursing, Medicine and Pharmacy are in Dallas. The enrollment is in the neighborhood of 1000. The Medical Department will be in session during the S. M. A. meeting, and all its clinics open to visiting physicians.

St. Paul's Sanitarium

This hospital was established in 1896. The original capacity was 210 beds, but an addition built in 1916 increased the capacity to 300 beds. Two hundred and fifty nurses are employed in the sanitarium. A nurses training school is operated by the Daughters of Charity of St. Vincent de Paul who are also in charge of the management of the main sanitarium. Investments in building and grounds are placed at \$1,750,000.00.

Dallas Sanitarium

The first bed unit of this hospital is now under construction and will cost \$500,000. When completed the hospital will contain 500 beds and represent an investment of more than \$1,250,000. It was established and will be operated by the North Texas Methodist Conference.

Parkland Hospital

This 250 bed hospital is operated by the City-County Board. It was established in 1896. Ten graduate nurses and seventy-two nurses in training are employed. It is estimated that the capital invested is in the neighborhood of \$1,000,000. Dr. Lane V. Cooke is the superintendent. A nurses training school is operated in conjunction with the hospital. At the present time plans are being made to enlarge the school to take care of one hundred students.

Freeman Memorial Clinic

This free clinic was first established in the basement of the First Presbyterian church, in 1921. In 1924 the clinic was endowed by T. R. Freeman and a

Westbrook Sanatorium

RICHMOND

VIRGINIA



A private institution of 135 beds, located in the Ginter Park suburb, near two trolley lines, within ten minutes ride of the heart of the city, and on the Richmond-Washington National Automobile Highway. Midway between the North and the South, the climate of this portion of Virginia is almost ideal. Many places of historic interest are within easy walking distance.

ILLUSTRATED BOOKLET ON REQUEST

The plant consists of twelve separate buildings, located in a beautifully shaded fifty-acre lawn, in the midst of a hundred and twenty-acre tract of land. Remoteness from any neighbors assures absolute quietness.

The large number of detached buildings makes easy the satisfactory and congenial grouping of patients. Separate buildings are provided for men and for women. Rooms may be had single or en suite, with or without private bath. A few cottages are designed for individual patients.

The buildings are lighted by electricity, heated by water, and are well supplied with baths. The water supply for the entire institution is derived from an artesian well on the grounds, of approved therapeutic value.

The scope of the work of the sanatorium is limited to the diagnosis and the treatment of nervous and mental disorders, alcoholic and drug habituation.

Every helpful facility is provided for this, and the institution is well equipped to care for such patients. It affords an ideal place for rest and up-building under medical supervision.

Four physicians reside at the sanatorium and devote their entire attention to the patients.

A chartered training school for nurses provides especially equipped nurses—both men and women—for the care of the patients.

Systematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

Jas. K. Hall, M.D.

O. B. Darden, M.D., Associate

Paul V. Anderson, M.D.

J. H. Royster, M.D., Associate

beautiful building was erected as a memorial to his wife and son. The clinic is absolutely free and handles an ever growing number of patients. The building, together with the equipment, is valued at \$100,000.

Hella Temple Childrens' Hospital

Established in 1923 by Hella Temple for the treatment of crippled children. It contains 50 beds and employs five registered nurses, fourteen attendant nurses and 12 other employees. It is supported jointly by Hella Temple and the Scottish Rite bodies.

The Timberlawn Sanitarium is a 40 bed hospital employing eighteen nurses and treating nervous and mental diseases. It is located on the Orphans' Home road and represents an investment of \$75,000.

Medical Arts Building

The story of Dallas as a medical center would not be complete without some mention of this 19 story skyscraper, completed in 1924 at a cost of \$1,500,000. It was designed for and is occupied by the medical and dental professions. It is of Gothic Cross design, assuring both light and ventilation to every office. At the time the building was erected it was the tallest monolithic concrete building in the world. About 60,000 patients visit this building every month.

The Medical Profession of Dallas and of Texas warmly invites every Southern Doctor and his wife to visit Dallas on November 9th, 1925.

Dr. David Russell Perry, formerly clinic physician for North Carolina Sanatorium, announces that on September 15th, 1925, he will open offices in the First National Bank Building, Durham, N. C., for the practice of internal medicine with special attention to diseases of the chest.

Drs. J. P. Matheson and A. A. Barron sailed on the 16th on the Berengaria. They will proceed directly to Vienna for several months special work, the former in the Politzer Clinic of Otolaryngology,

of the University of Vienna, and the latter for work in Neurology.

The Seventh District Medical Society will meet in Gastonia Tuesday, October 6, 2 to 10 P. M. A valuable program has been arranged a part of which is an address by President MacNider of the State Society.

Dr. Warren T. Vaughan, of Richmond, announces to the profession the establishment of a Kidney Clinic for the investigation and treatment of Nephritis and allied conditions, particularly arteriosclerosis and hypertension. Clinic hours on Friday between two and five. Only charity cases referred by the attending physician or social service organization will be cared for during the clinic hours.

American Board of Otolaryngology will hold its next examination at the Cook County Hospital, Chicago, on October 19th, 1925. Application should be made to the Secretary, Dr. H. W. Loeb, 1302 South Grand Boulevard, St. Louis, Missouri.

In Memoriam

Dr. Arthur E. Ledbetter was born October 26th, 1860, at Jamestown, Guilford County, N. C.

His parents belonged to the denomination of Friends, and Arthur Ledbetter was educated in the public school of Jamestown, and at New Garden school, now Guilford College.

He taught school for a short time, until his marriage in October 1884 to Miss Rhoda Elliott. Soon after his marriage he began the study of medicine with Dr. Wm. Bradshaw, and was graduated from the University of Maryland in April, 1888. He went before the State Board in May of the same year and immediately joined the State Medical Society.

In August, 1888, he began the practice of his profession in Caswell County, and two years later moved to Greensboro, where he continued in active general practice until attacked by

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The Sanitarium is a non-commercial institution operated under deed of Trust.

Case of active pulmonary tuberculosis, epilepsy, and insanity are not received.

Address all communications to
JOHN A. LICHTY, Ph.D., M.D.,
Superintendent
Formerly Associate Professor of
Medicine of the University of
Pittsburgh



the disease which caused his death.

In 1898 he was elected Superintendent of Health of Guilford County which position he held for two years.

Dr. Ledbetter was quiet and unassuming in manner, but speedily won the hearts of all who were privileged to know and appreciate him, and had the esteem and affection of all his patients. He was fond of reading and study, and had a large store of general information, always ready for use. He had written short biographical sketches of many of the physicians who had practiced, or were practicing in Greensboro and Guilford County, some of which contain material which would be hard to obtain elsewhere today.

Dr. Ledbetter died June 2nd, 1925, from an attack of general progressive paresis which began in September or October last year.

He was an earnest Christian, a diligent Bible student, and for years a teacher in Sunday school, and died as he had lived, in the hope of a glorious resurrection.

The following Resolutions were passed by the Guilford County Medical Society:

Whereas death has taken from us our esteemed friend and valued member, Dr. Arthur E. Ledbetter:

Resolved that while we mourn his loss, we can only bow with submission to the will of our Heavenly Father.

Resolved that this Society extends its heartfelt sympathy to the bereaved members of his family.

Resolved that a copy of this paper be spread on our minutes and furnished to the papers and to the family of Dr. Ledbetter.

*B. B. Williams, M.D.,
Greensboro, Aug. 14, 1925.*

A Clinical Classification of Brights Disease

Thomas Addis, San Francisco (Journal A. M. A., July 18, 1925), made a study of the effect of various physical factors on the formed elements of the urine. He found that hyaline casts and all casts whose matrix was hyaline disappeared from neutral sodium chlorid solutions when the salt concentration was reduced to less than 0.5 per cent. When the hydrogen

ion concentration of the solution was varied, it was observed that the less the hydrogen ion concentration the greater was the concentration of sodium chlorid necessary to keep the casts from dissolving. He had already noticed that those specimens of urine in which few or no casts were present were either dilute or alkaline or had both of these properties in lesser degree. It seemed likely, therefore, that variability was no inherent characteristic of cast formation, but might be the result of changes in the degree of dilution and reaction of the urine. This proved to be the case, since the variability was replaced by a satisfactory degree of constancy whenever the conditions were such as to induce the secretion of concentrated and acid urine. The results of the examination of the urinary sediments of the patients who were investigated fall naturally, on qualitative as well as on quantitative grounds, into three main divisions; and since these divisions seem to be corroborated by many significant facts elicited by other methods of examination, Addis has become persuaded that they represent three diseases that are pathologically and etiologically distinct and separate. In order to avoid the confusion that would result from the use of terms that are familiar but have been used with a somewhat different meaning, he has reverted to a purely descriptive terminology and has called the first division hemorrhagic Bright's disease (seventy-one cases), the second degenerative Bright's disease (forty-three cases), and the third arteriosclerotic Bright's disease (twenty-six cases). The initial stage is a sequel of streptococcal infections. The second disease has been called degenerative Bright's disease because the constant and most prominent feature of the sediment is the large number of epithelial cells in various stages of granular or fatty degeneration. The third disease, arteriosclerotic Bright's disease, is of great importance because it occurs more frequently than any other form of Bright's disease. But so far as the kidney is concerned, its importance is of a negative character; for when the diagnosis has been made it is no longer necessary to consider the renal lesion as a factor in the management of the patient. These are the patients with hypertension who are often told that they are suffering from "chronic interstitial nephritis" and who consequently live in fear of death in uremia that never comes. Each of these three conditions is described in detail.

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Medical Society of the State of North Carolina

Seventy-third Annual Session, April 20, 21, 22, Wilmington

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Second Vice-President, Dr. W. W. Dawson, Grifton.

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Eye, Ear, Nose, and Throat—Dr. O. C. Daniels, Oriental.

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*Your assistance in keeping this list revised to date, as well as in supplying medical news notes is greatly desired.—Ed.

Southern Medicine and Surgery

VOL. LXXXVII

CHARLOTTE, N. C. OCTOBER, 1925

No. 10

APPENDICITIS IN CHILDREN WITH SPECIAL REFERENCE TO DRAINAGE*

BYRD CHARLES WILLIS, M.D., F.A.C.S., Rocky Mount

The subject of appendicitis should and will continue to occupy the attention of the profession until, owing to prompt diagnosis, ruptured, abscessed cases with peritonitis and their entailed mortality are no longer seen. This state of perfection cannot be attained until the profession has informed and impressed upon the laity the necessity of calling them early in cases of acute abdominal pain, and then we must do our part by making a thorough physical examination and taking a careful history before prescribing. We cannot vaccinate against the disease which will continue to occur unless a religious rite or compulsory law is established for the removal of the appendix at a tender age, and then it would be necessary to adopt the Jewish seven days for circumcision, for Abt, in 1917, collected from the literature 80 cases in infants under two years, twenty of these being in patients under three months.

My associate, Dr. Boice, and I have operated upon 1181 cases of appendicitis in Park View Hospital, between July 1, 1914, and April 1, 1925, with a mortality of 27,—2.28 per cent. One hundred and ninety-one cases, 16.2 per cent, were children 14 years and under. The total of 1181 does not include appendices removed incidentally to some other operation. The youngest patient was aged three, and the oldest 74. Of the 191 cases operated in children, five died, giving an operative mortality of 2.6 per cent. In addition to these, one case entered the hospital moribund

and died four hours later without operation. We have classified these cases as follows:

	Cases	Deaths
Chronic or recurrent	26	0
Sub-acute	13	0
Acute non-perforative	74	0
Acute, gangrenous, perforative appendicitis with or without definite abscess formation necessitating drainage	77	4
Acute perforative appendicitis with general diffuse peritonitis	1	1

We feel unable to say that we have ever operated upon a case of general peritonitis that recovered. There is only one questionable case in this classification, and that one died. That case had a thinly walled-off abscess at the head of the cecum and another in the pelvis, both abscesses containing a large amount of thin watery foul-smelling pus. It is probable that the walls of these cavities broke down following the removal of fluid and that peristalsis spread the infection. Necropsy showed several small abscesses on the left side and numerous intestinal adhesions.

How can a surgeon be sure that a patient has a general peritonitis when he explores only a small operative area of the abdomen? It would certainly be poor surgery to explore the whole abdominal cavity. General peritonitis is one of the gravest, most desperate conditions met in surgery, with an exceedingly high mortality rate. Many cases, on opening the abdomen have a large quantity of thick odorless lymph with some localized injection of the intestines, and on locating the appendix abscess it will be found well walled-off containing foul-smelling pus: this case

*Read before Interstate Post Graduate Assembly. S. S. Doric.

will require drainage, not on account of general peritonitis, but because of localized pus. The same type and amount of lymph can likewise be encountered in a very acute unruptured appendix and require no drainage. It is possible that some of these cases are classified under general peritonitis by some operators. We have not carried them in that classification in this series for we do not consider them as such. To do so makes one's statistics look very fine and seems to justify, perhaps, a high mortality rate.

In the 191 cases, 164 were white and 27 colored. There were 92 females and 99 males. The highest temperature was 104 F., lowest 96. The highest pulse rate 160, lowest 72. The longest period of sickness before hospitalization was 14 days, the shortest four hours. Sixty-seven histories recorded that purgatives had been administered one or more times. Of the five that died, two had records of purges. Eighty-two histories recorded previous attacks. The highest leucocyte count was 39,800, lowest 6,200. The longest time in the hospital was 36 days, the shortest 7. The patient who was confined in the hospital 36 days had a complicating pulmonary abscess, but survived after a very stormy convalescence. The number of cases drained was 78. In 14 of these the appendix was not removed as it could not be found readily, and it was thought better not to disturb the walls of the large abscess. Four of the drainage cases with removal of the appendix died, as did one of this class in which the appendix was not removed. Seventy-four were operated upon for acute appendicitis but were not drained, as the appendix was not ruptured. Combining the number of acute and acute perforative cases we have operated on 152 with five deaths, a mortality of 3.3 per cent. Muller and Ravidin report fifty-eight cases operated with fifty-four recoveries and four deaths, 6.8 per cent mortality. Simpson reports thirty-four cases operated with twenty-nine recoveries and five deaths, 14.7 per cent mortality. Mitch-

ell reports forty cases with a 25 per cent mortality. Motley reports thirty-seven children with two deaths, 5.4 per cent mortality. Gray and Mitchell report two hundred cases, one hundred and twenty-six of which were acute with a mortality of 15 per cent. Dowd, in 1905, reported seventy cases with a mortality of 10 per cent. In 1907 he reported fifty cases, with a mortality of 8 per cent. In 1910 he reported sixty-one cases without a death. Alexander reports five hundred cases of acute and chronic appendicitis with a mortality of 3 per cent.

The diagnosis of appendicitis in children is generally conceded to be more difficult than in adults, for they are more apt to be frightened and less accurate in their description of pain. The symptoms, nausea, vomiting and abdominal pain are common to many other diseases of childhood. One of the most characteristic of clinical findings is the high leucocyte count. In the ruptured cases, the average was 22,890; in the unruptured, 16,930. The latter figure is in close accord with the Muller and Ravidin series 16,920, and with Motley's 17,400 per cubic millimeter. Their cases were not divided into ruptured and unruptured classes. True rigidity is a very important finding and Rovsing's sign is of great value. Careful chest examination should be made in all children, as pneumonia causes a high leucocyte count and abdominal pain in many cases. There is also apt to be confusion in right sided pyelitis which has a lower leucocyte count and a high temperature as a rule.

Operation is done upon all acute cases of appendicitis as soon as diagnosis can be made unless there is some chest or grave kidney condition. The McBurney incision has been used almost exclusively, 185 times. If it is a ruptured case the abdomen is packed off and hypodermoclysis is given during the operation, trying to inject 1500 to 2000 c. c. normal saline as rapidly as the patient will take it, and we believe that this has been of great importance in keeping down the mortality, as many of

the cases were badly dehydrated and very toxic. Drainage, consisting of two or three pieces of soft collapsible tubular one inch rubber tissue is used. If there is likely to be drainage from the pelvis, one or two pieces are carried to its bottom along the pelvic wall, placing a short piece near the appendix base. We carbolize and alcoholize, purse string and bury appendix stump in practically every case. Only one persistent fecal fistula developed, and in that case a round worm worked out along the drainage. We are aware of only one post-operative hernia. The wound is closed on the proximal side of the drainage so as to bring it out against the lateral abdominal wall and not through the abdomen as would be the case in a right rectus incision unless stab drain in flank was used. Stiff rubber tube, glass or gauze drainage is not used, fearing the possibility of pressure necrosis from the first two, and the formation of filmy adhesions in the gauze, blocking drainage. The simple rubber tissue slips out very easily at the end of the fifth or sixth day. We begin to shorten this on the fourth day and remove it on the sixth. The wound is not closed so tightly as to prevent drainage, but is made snug enough to pucker the rubber tissue and allow spaces in its folds. No accumulations remained in

the abdominal cavity when the drain was carried to the abscess pockets. Morphine is given freely, soda and glucose solution per rectum, and everything by mouth is stopped for twelve to twenty-four hours. In cases where there is infection in the pelvis, the patient is propped up and turned on the right side; if it is confined to the right iliac fossa about the head of the cecum, he is turned to the right side but the head of the bed is not elevated.

Conclusions

1. Operative interference should be immediately instituted on making a diagnosis of acute appendicitis unless some serious complication is present.
2. When in doubt do not drain.
3. Subcutaneous or intravenous introduction of fluids should be done during operation.
4. Do not use glass or stiff rubber tube drainage.

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INDICATIONS FOR TONSILLECTOMY*

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The frequency and also the importance of the operation of tonsillectomy occurring in our special branch of medicine is my reason for bringing this subject to your attention today. It is not that I have anything new to offer, but it is my hope to elicit discussion which will be helpful to us all. There is no operation in the whole domain of surgery, which, if well performed when the indications are clear, brings greater re-

lief to our patients, and more credit to our profession than a well performed tonsillectomy. However, we must constantly bear in mind that the operation, even in the hands of the most skillful, is not without danger. The number of fatalities reported in the literature of the subject, though not startling, fully justifies this statement.

The tonsils in early infancy, before they have become the seat of chronic infections, are thought to perform a useful function in the formation of leucocytes in the same way as lymphoid

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tissue acting elsewhere in the body. As the human organism is well provided with lymphoid tissue situated in other regions, it is not likely that any harm ever results, on this account, from removal of the faucial tonsils. It is held by some, though not proven, that the crypts of the tonsils, acting as test tubes and harboring various organisms, tend to immunize the individual against infections of the upper respiratory tract. It can be readily seen that such chronic infections existing in the tonsils may become a distinct danger when the patient's resistance, for any reason, is lowered. This, in my opinion, is what usually happens when one develops an attack of acute tonsillitis.

Attacks of tonsillitis, particularly those occurring in scarlet fever and diphtheria, are likely to leave the tonsils in such a state of chronic inflammation that complete resolution is impossible. We find in our profession two extreme views: one held by those who regard every tonsil a menace, regardless of its appearance and history, and the other a more conservative view that only the large, protruding tonsil should be treated surgically. It would seem that somewhere between these extreme views, we should stand in giving advice to those seeking our aid in deciding this important question. I might say, in this connection, that as the operation of tonsillectomy in children is less serious than it is in adults, we can well afford to be less conservative in advising operation.

Serious complications, such as hemorrhage, infection, and lung abscess, are much less frequent in children, and it is a common observation that their convalescence is much more comfortable and satisfactory, particularly so if trauma and hemorrhage be avoided. This being the case, it will be necessary to regard somewhat in a different light the indications for tonsillectomy in children from those for adults.

In children under general anesthesia, I might say that almost without exception the adenoids are removed with the tonsils, regardless of the symptoms,

though the tonsils may be left undisturbed when the adenoids are removed, especially in infants and very young children. This naturally brings me to the question of at what age should the tonsils be removed in children? It has been my custom to postpone operating till the child has reached two or three years of age, depending somewhat upon the size and vigor of the child. In other words, the indications requiring tonsillectomy in the very young should be urgent, such as exists in marked cervical adenitis, pyelitis, acute arthritis, and endocarditis.

As the old do not stand operations particularly well, and their expectancy is not great, we must have more urgent indications before subjecting such patients to an operation. However, as in young children, the indications may be so urgent as to demand operation at practically any age.

In deciding the question of tonsil removal, it is often of great advantage to work in close association with both the internist and the dentist, in order that our patient may receive the benefit which comes from a thorough investigation and study of the case. This is particularly important in case of adults.

Although the tonsils are the fruitful source of systemic disease arising from a focal infection, yet we must not lose sight of other regions as the paranasal sinuses, middle ear, gall bladder, appendix, intestinal tract and genito-urinary organs. In children, special emphasis should reasonably be placed on the tonsil as the focus of infection. While in adults, much consideration should be given other regions of the body.

In searching for the cause of a systemic disease occurring in children, the problem is relatively a simple one as compared with that of adults. We are able more readily to exclude the teeth, the gall bladder, and genital tract, all important factors in adults, and we are justified in placing special emphasis on the tonsils.

There is a class of patients occurring particularly in adult women who complain of painful dry throats following

tonsillectomy. This may be due to inaccuracy of dissection, but whatever is the cause, it is one of the disappointments which may be occasionally encountered. We should bear in mind that secondary foci may develop in other organs of the body as the joints, lymphatic glands, gall bladder, etc. well removed from the original focus in the tonsils. In such cases the relief of the symptoms may be slow and at times disappointing. After removal of the primary focus every therapeutic and hygienic measure possible should be brought into use to build up the resistance of the patient.

Although the history of the case, in reference to the tonsils, is more important than their appearance in deciding the necessity of tonsil removal, yet there are certain local manifestations of the glands themselves which are helpful in deciding the necessity of a tonsillectomy. Inspection of the fauces will, at times, reveal very large, projecting tonsils which interfere with both phonation and respiration. This type of tonsil, though not necessarily a badly diseased gland, yet may require removal for mechanical reasons.

It is this kind of tonsil which is most frequently condemned by the general practitioner and school inspector, though from a general health standpoint, it is not the most harmful. The tonsil which seems to me the most dangerous to the individual, especially in children, is frequently the large red gland, usually well covered by the pillars, and often presenting large fissures or open crypts sometimes containing cheesy material. If the anterior pillars present a deep red appearance, we have additional evidence that the tonsils are the site of chronic inflammation.

In adults, where fibrosis has taken place, we are more likely to observe a submerged tonsil, not always large, which at times can be expressed detritus or a milky exudate, the latter being particularly strong evidence in favor of their removal. Large, palpable glands in the region of the angle of the jaw, particularly if they are tender, is

strong evidence that the faucial tonsils are the site of chronic inflammation. However, Shambaugh is of the opinion that, as the systemic infection often takes place through the blood stream, too much emphasis should not be attached to the absence of glandular enlargement in the region of the tonsils.

We should bear in mind that localized abscesses may be situated deep in the tonsil and are only discovered at the time of operation. French advocates a method of trans-illumination of the tonsils to determine whether or not there is sufficient disease to justify removal.

Frequent attacks of sore throat, particularly when accompanied by fever, give sufficient evidence to require tonsillectomy. However, we should bear in mind that in very young children pain may not be referred to the throat in attacks of acute tonsillitis. The child may have a stomach and intestinal upset, associated at times with a considerable rise of temperature, the tonsillar inflammation being entirely overlooked. Such attacks, sometimes termed acidosis, justify operation when the acute attack is well over, due care being taken in the preliminary treatment of the patient by the giving of alkalis before the anesthesia.

The occurrence of paranasal sinus diseases in children, which has been so well emphasized by Dean, is sufficient reason for tonsil and adenoid removal. The association between acute articular rheumatism, endocarditis, pyelitis and nephritis, and tonsils in children is so close that we are justified in removing the tonsils regardless of their appearance. Chorea, which is closely allied to acute articular rheumatism, would seem to require the same surgical procedure, though some writers as Crowe are very conservative in advising surgical measures in such cases. My own experience fully justifies tonsillectomy in chorea.

Patients occasionally consult us complaining of lack of strength and vigor, sometimes associated with vague muscular pains. The appetite may be poor and there may be some loss of weight.

The tonsils in all such cases should be carefully examined, bearing in mind of course that these symptoms may be due to a beginning tuberculosis, or hyperthyroidism. When these symptoms are due to toxic absorption from the tonsils, great benefit can be expected from their removal.

Cervical adenitis, whether tubercular or not, demands a tonsillectomy, provided the teeth, the ear or a blood disease be excluded. Many tonsils in such cases are found to be the site of latent tuberculosis. Middle ear disease, with or without suppuration, should have the tonsils and adenoids removed before the disease has advanced beyond the hope of repair. When the ear discharge is of long standing, we should be very guarded in our prognosis as to the benefit to be derived from the operation. An attack of quinsy, which is so serious in its manifestation, and is prone to repeat itself, should cause us to advise tonsillectomy without hesitation.

On account of the close association of thyroid enlargement and focal infection, we should be suspicious of the tonsils as a causative factor, though not to the exclusion of other possible foci. We should also bear in mind that such patients do not react well to operations, so we should exert great care in locating the focus of infection. Some general surgeons, when the symptoms point to the tonsils as the causative factor, require their removal before attacking the thyroid, while others prefer that the tonsillectomy follow the operation on the thyroid. It is in such cases that close association with the dentist and internist is most helpful to the patient.

The occurrence of Vincent's angina of the tonsils may require their removal, though, if possible, it is wiser to await a cure of the double infection of the spirochetes and spirilla before advising operation. At times, however, a cure can only be obtained by removal of the tonsils.

There are certain inflammatory conditions of the eye as corneal ulcer, keratitis, uvetitis, etc., which have as a focal origin the tonsils. Unless another source of infection can be discovered,

including syphilis, the tonsils should be removed.

There is a certain type of neuritis, involving important nerves as the optic and auditory, due to a toxemia arising from a certain focus or foci. In all such cases, the tonsils should be carefully scrutinized, bearing in mind also the close relationship of the post ethmoidal cells and the sphenoids to the optic nerve. We should not lose sight of the fact that a syphilitic infection is particularly prone to attack these delicate nerve structures. Great assistance can, in such cases, be derived from a blood and spinal Wassermann.

In diphtheria carriers, where the nose or throat cultures remain positive for a number of weeks, the tonsils and adenoids should be removed. This measure was carried out by the writer as far back as 1908, and is now generally practiced at the large contagious hospitals.

I might say a word about operating upon singers. Although Voorhees with a large experience has seen no harm to the voice following tonsillectomy, yet it has seemed to me that we should proceed with caution in such cases. However, if the indications be urgent the tonsils should be removed with accuracy of technique, bearing in mind the action of the palato-pharyngeus muscle in phonation. Injury to the posterior pillar might prove disastrous to the singing voice.

The question of the advisability of removing diseased tonsils in cases of pulmonary tuberculosis often arises and becomes at times a very difficult problem. In the presence of temperature, or other marked evidence of activity in the lungs, we should be very slow about subjecting a patient to the added burden of an operation. However, when the case becomes arrested, and the tonsils are evidently harming the patient by being a source of toxic absorption, we should not hesitate to advise operation, local anesthesia being used. In this connection, I would like to strongly urge that care be taken that the tonsils be not disturbed in the presence of active laryngeal or pharyngeal tubercu-

losis. My motive for sounding this note of warning is for the reason that I have observed several disastrous cases coming under my care, when active tubercular ulcers developed in the tonsillar fossae following operation. In such cases, the prognosis is almost hopeless and the end comes after a very painful experience.

Before closing this paper, it seems only fair to say a few words about the contraindications to operation, some of which have already been referred to. Among contraindications, I would place first of all hemophilia. The history of the case and the clotting time of the blood should be helpful in excluding such cases. Diabetes, up to a few years ago, was regarded as a contraindication, but now under the administration of insulin and proper diet, we approach

the operation without special anxiety; preference being given, in such cases, to local anesthesia.

In reference to age will say again that, under two or three years, or more than sixty, we should have urgent indications before subjecting our patient to a tonsillectomy. It is generally agreed that, at the two extremes of life, patients do not stand operations well.

Syphilis is not a positive contraindication for tonsillectomy, yet the operation should be postponed 'till the disease is well under control with appropriate treatment.

I realize full well that the subject chosen has been too broad to be fully covered within the limits of my time and your patience, but if a full discussion of the paper is elicited, I shall feel that our time has not been wasted.

MALIGNANCY*

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The diagnosis of malignancy is something more than a mere statement—sarcoma or carcinoma. It is more than a histologic report. It is the recognition of different types, groups and phases in the development of malignant tumors. It is the recognition of the grades of malignancy and expectancy in malignancy.

To make a comprehensive study of malignant tumors, the tumor should be seen at the bedside, in the operating room and in the laboratory. By combining the data obtained from these different sources, a clinical rather than a histologic diagnosis of malignancy can be made. A clinic where the clinician, surgeon, roentgenologist and pathologist are closely associated offers a most suitable place to study malignancy in all its phases. In such an institution a "clinical diagnosis" can be made, and it is this form of diagnosis that makes a future for the development of knowl-

edge concerning malignant growths.

Just at present the attempt to grade malignancy is occupying the minds of a number of observers. This is a very difficult task and one that will necessarily lead to a number of errors, still the time may not be far distant when a microscopic examination may reveal to us sufficient information to be able to tell the patient that he will recover or that he will have a recurrence or that he will ultimately succumb to the disease.

Broders' work in epidermoid carcinomas opens up a realm for extensive research, and while his types of epidermoid carcinomas are fairly well fixed and defined, still we see an occasional variation in them. I have in mind a case I saw the 13th of this month. Five months ago she had a type II epidermoid carcinoma of the thigh. This was removed surgically and she received an insufficient treatment of radium four months ago. The recurrence took place at the site of the operation and it is a very active cellular epidermoid carcino-

*Read before the 27th Annual Meeting of the Tri-State Medical Association, February 18-19, 1925.

ma, what would be rightly classified as a type IV. Whether the radium or the operation brought about this mutation I am not prepared to say. According to Judd, "Broders' work is one of the most important investigations that has been made of cancer up to the present time. While it does not have a distinct bearing on the etiology of cancer, it is of very practical value and will enable the surgeon to make a fairly accurate prognosis in these cases. It will enable him to avoid operating in certain cases that are hopelessly malignant from the beginning. * * * Because of the uncertainty of a prognosis in cases of cancer, as estimated by other methods, I am sure the surgeon will be very gratified to have this method at hand."

In a study of epidermoid carcinomas of the skin, I was impressed with the fact that it is difficult to type the growths if the ulcer is of considerable size. It is not unusual to find highly differentiated tumor cells in one part of the growth and vegetative cells elsewhere. In other words, the growth does not always show uniform cells. At the elevated growing edge we find cells of the vegetative variety, while in the crater of the ulcer hornification and other signs of differentiation are present. This fact naturally brings up the question that a reaction on the part of the patient as evidenced by the small round cells, fibrosis, etc. may influence the histologic picture of the growth. At the edge or growing portion of the tumor, where vegetative cells may be found, the secondary tissue changes are not so great as in the center or crater where the differentiated cells chiefly lie.

Differentiation plays a very important role in malignancy. This is well shown in the studies of sarcoma. The small round cell sarcoma, or one that approaches the original mesodermic cell as first seen around the primitive streak in embryos, is the most malignant of all of the sarcomas. The next in order of malignancy is the large round cell sarcoma. It is also noticeable that the cells around the primitive streak are first small round cells and later large

round cells and then they elongate to form spindle cells. The next in order of malignancy after the large round cell sarcoma is the spindle cell type. After the spindle cell type we come into some highly differentiated sarcomas such as the chondro-sarcoma, fibro-sarcoma, etc. The malignancy in these tumors appears to vary inversely as the amount of stroma, or in other words inversely as the amount of differentiation.

If we study a large group of sarcomas we find the grade of malignancy mentioned above to hold true just as we find that Broders' classification of epidermoid carcinomas is correct. Still if we apply such knowledge to individual cases we are sure to make errors and usually our errors will be in the most important cases. It is my belief that the time has not arrived when we are able to tell even with a fair degree of accuracy the whole story from the microscopic examination. Much work is yet to be done along these lines before a real practical use can be made of it. In the grading of malignancy one factor is ever present which may upset our calculations and that is the individual's combative power or what some would call resistance.

One of the most difficult problems which a pathologist encounters is the study of pre-cancerous lesions. The intermediate territory between the malignant and inflammatory, no matter where located, is a knotted problem and one that takes careful study to solve. As a rule pathologists are apt to lean toward the gloomy side and call such lesions early malignant disease, but I agree with Ewing when he states "it is generally safe to regard them as benign if there is any doubt about it."

Perhaps the most important asset to a pathological laboratory is a good tissue technician, one who can make real sections. In order to make a comprehensive study of tumors, the cells must stand out clearly. It is indeed difficult to study the vegetative or embryonal characteristics of cells or to see mitotic figures and other evidences of malignancy in sections several times the

thickness of the cells composing the tumor. To my mind herein lies the danger of frozen sections. If the growth is obviously malignant, there is little difficulty with the frozen section method of examination, but if the lesion is pre-cancerous, or if we wish to make a detailed classification rather than a general one, the frozen section may lead to error. Frozen sections are usually thick, so thick in fact that we are forced to study a group of cells rather than an individual cell. Where pathological accuracy is at stake, the frozen sections must give way to carefully prepared celloidin or paraffin sections.

The gross features of malignant growths are varied yet they have many points in common. It would not be possible to take up even a small percentage of the gross findings in malignant tumors in this discussion; still there are certain signs in tumors that so obviously speak for malignancy that no discussion on malignancy would be complete without them. Induration and infiltration are the most uniform signs of carcinoma; but they are not necessary to a sarcoma unless the sarcoma has invaded its capsule. Occasionally a medullary and soft carcinoma may be encountered, but as a rule the soft tumors are of sarcomatous character, one that contains many cells and much blood. Encapsulation, if it exists, may be determined from a gross examination and its presence is a most favorable prognostic sign. The rupture of the capsule with the invasion of the blood vessels offer an unfavorable prognosis. Fixation of the tumor to the surrounding structures speaks for malignancy. Metastatic lymph nodes and secondary tumors may aid in the diagnosis of malignancy in the deep seated tumors but in the superficial growths they confirm it.

One of the outstanding pieces of research on cancer is that done by Wood on massage distribution of malignant neoplasms. In a very elaborately controlled series on four hundred animals he is able to show that the incidence of metastases is very much higher in the massage animals than in those of the control group. Following a massage of

from three to four minutes it is not unusual, provided the animal is killed at once, to find the capillaries in the lungs stuffed with malignant cells. Controls do not show the same condition. If the animals are kept for two or three months he finds in the lung only two or three metastatic growths. This means of course that the malignant cells are swept into the systemic circulation and propelled to some distant organ where secondary processes may or may not be found.

This to me is a very practical observation. We should learn from it the danger of rough and too frequent manipulations of malignant growths in our examinations, and it should teach the surgeon that unnecessary trauma in his operation is contraindicated. Along these lines Ewing makes a very pertinent statement when he says "it may possibly be safer to excise at once certain doubtful breast tumors for diagnosis rather than submit them to oft repeated manipulations by several consultants, staff members, nurses, patient's friends and operating room attendants."

It has long been thought that the incision into a malignant tumor is a very dangerous procedure. Animal experimentation seems to indicate that this fear is unwarranted. It has been shown conclusively that rats suffering with the Flexner-Jobling tumor are no more prone to lung metastases after an incision than the control animals. Of course it is hard to lay down generalizations from observations on the effect of incisions into one group of tumor in one kind of animal; still the fact remains that we have been scraping and cutting into cancers for years without apparent harm to the patient. Cutting out a portion of a tumor renders a great service to the patient. It may save a mutilating operation, but it is a practice that should be pursued with a great deal of caution. The excision of a small portion of an accessible tumor, provided the cut can immediately be seared over by cautery or carbolic acid, is usually a harmless operation. It is very important to see that the hemor-

rhage is stopped before leaving the operation. A little hemorrhage after the incision into the tumor is not harmful to the patient as it will tend to wash out of the capillaries the tumor cells that may be carried there with the incision, but before applying the dressing to the wound it is well to touch up all raw areas with a slow heat cautery. If the tumor is encapsulated and is growing under pressure it is never wise to cut into it. The sudden release of the pressure may bring about widespread metastases.

The cutting into breast carcinomas is a debatable procedure. Ewing sums up the situation when he says "cutting through skin to excise a portion of the breast tumor is greatly discountenanced. It is better to remove the tumor and follow immediately by the procedure indicated by results of the pathologic diagnosis."

Objections have been raised to the cautery method of incising into tumors on the grounds that it leaves the capillaries in a dilated state and thereby makes an avenue for the spread of the growth. This objection is more theoretical than real. For my part, I advocate the use of the cautery to sear the cut surface of a bleeding tumor. I feel much safer by doing so.

Regional studies show that neoplasms vary greatly in malignancy and that malignancy depends largely on the site of origin of a tumor. A spindle cell sarcoma arising from the skin is not so

malignant as a spindle cell sarcoma originating in the periosteum. An epithelioma arising in a mucous membrane is infinitely more malignant than the skin epitheliomas.

Time will not permit me to cite other examples of malignant variations, but as a rule the tumors that have a deep-seated origin are vastly more malignant than those that arise from superficial structures. It is very important in our studies in malignancy to always keep in mind as far as we are able the location of the tumor origin. If we can see the tumor in situ our opinion as to the malignancy may be strengthened; but if the tumor is sent to the laboratory for diagnosis, a little note as to the possible origin of the growth should be incorporated in the history of the growth. Such information will aid the pathologist greatly in arriving at a diagnosis and expectancy of the new growth.

The diagnosis is literally "the recognition of distinct types and entities amongst tumors." The laboratory cannot accomplish much in this direction without the aid from all sources. The pathologist must have at his command more than the gross tumor and its microscopic appearance. He must have access to the sick room in order to see living pathology, he must attend operations and consult the surgeon at every turn. The future of malignant pathology lies not in the microscopic diagnosis but the "clinical diagnosis of malignancy."

DRAINAGE AND DRESSING*

H. S. LOTT, M.D., Winston-Salem

Conditions and pathology do not change. Each decade brings its crew of workmen; and the "pendulum swings," because the workmen change.

Simple, direct methods in surgery accomplish most. The men who have

achieved greatest success—life-saving success—have realized this fact and adopted such methods.

Two main points should always lead the surgeon: first, recognize a focus for attack; and second, reach this focus promptly, remove it, if its removal is possible,—and stop. The blind seeking for something which may, or may not exist, prolongs the anesthesia and taxes unduly the vitality of the patient.

*This is a verbatim copy of an article by Dr. Lott published in the American Journal of Obstetrics and Diseases of Women and Children. Vol. LXXII, No. 4, 1915, and reprinted at the author's request.

Most especially in the abdominal surgery should this fact be borne in mind, for 'tis here that symptoms are most obscure and misleading, and that the temptation is greatest to locate the focus and establish a diagnosis after the incision is made. In yielding to this temptation the surgeon not only blunts his own sensibilities, but also obstructs the path of progress toward that refinement of diagnostic skill, which should ever be his aim.

Furthermore before making the incision, at least before completing the incision, it should be determined, so far as it is possible, will the case be one for drainage, or will it not? *Nature's way is to drain*; drainage, therefore, in the surgery of today is a life-saving element. The peritoneum is the surgeon's friend, but even friendship should not be abused, and when its surfaces have been ever so slightly soiled, and in small areas, a tiny wick to lead filth from this point gives our patient a better chance, and ourselves a better conscience. If the case should be one with pus and require the extensive freeing of adhesions, then the simple, and ample, straight incision with an abundance of drainage, and the "wide open game" afterwards, is, beyond a doubt, the best one to be played.

Drainage, therefore, and its distribution, is not a chance and haphazard procedure, but an essential, and a life-saving one. In the field of general surgery a simple clean gauze wick, after an amputation, will lead out the effusion of blood and serum, which is sure to come within the first twenty-four hours, and which, but for this wick, must remain and await resorption.

Within the pelvic and abdominal cavities, drainage and its proper and effective distribution is most essential in about all conditions urgently demanding surgical intervention. In many cases the most that we do is to anticipate Nature; and the manner of its placing indicates the skill and wisdom of the surgeon equally with any other feature of the operation. For instance, in pus cases of appendicitis, of which, today, there are comparatively few, the

want of drainage is the want which both demands, and justifies, the operation. After finding and removing the appendix, all points for the possible accumulation of filth should be sought, free vent established for its egress, and a gauze wick carried to the remotest point of its travel. These gauze wicks may be placed between coils of intestine, between omentum and intestine, even to the opposite side of the abdominal cavity; and to the floor of the pelvis; and unless it is done, and this filth given vent, we have done very little for our patient.

In some cases, about as bad as pus cases could be, and after removing a very large part of the omentum, I have carried good-sized wicks entirely across the abdomen, well up under the lower border of the liver, and well down into the pelvis—and, once, in a case, which I remember very well, this distribution in all three directions was necessary; and while, at the time, it looked very much like invading foreign territory, I believe it contributed very largely to saving the life of the patient. Therefore, in pus cases, where it is of such vital importance, there is very little danger of putting in too much drainage, carefully placed; and I firmly believe that the danger is far greater of putting in too little.

In the placing of drainage the order of entrance to the abdominal cavity should be reversed. For instance, with the topography of the region well in mind, we pass two fingers through the abdominal incision, and working from a given point, carefully and systematically, seek in all directions even to the cavity's remotest limit for the focus demanding repair; this point once located, our efforts will be restricted to its limit, and their results will be far more effective.

Having accomplished our object and bearing well in mind the planes of cleavage which have led us to this point, our wicks for drainage should be placed reversely from *within out*, all seeking and making exit at the lower angle of the *primary straight* incision; and the direction of each well borne in mind for

future reference. "It is the little things in life that count" and I know of no condition in which care and precision are better worth the while, or will give happier results, than in the placing of drainage in pus cases of appendicitis.

The after-care of these cases is a matter of very great importance, and I feel that it is one about which we hear too little by prominent operators.

Dressings, and their proper doing, are of equal importance with the primary operation. With just what was done at the operation, and the distribution of our drainage, well in mind, the plan of each dressing may be pretty well outlined beforehand. This saves time, and as patients look forward to dressings with a great deal of dread, they should be done as gently, and as quickly as possible.

Each dressing should be done with strictly aseptic preparation—both of the dresser and the material used; not with parade and display, but with simple thorough cleanliness. In bad cases, left open, where the drainage is good and we have a wet patient and a wet bed, within the first twenty-four hours, the dressing should be changed at the end of that time. This is done simply for the sake of comfort and cleanliness, and the wicks are not disturbed at all.

After forty-eight hours very gentle traction may be made upon the wicks, bearing well in mind the direction of each; no force should be used at this time, just the weight of the hand being sufficient, and the patient should be given as little pain as possible, although the giving of some pain is unavoidable. Wicks, well distributed in such cases, should be largely left to loosen themselves, and there should be no hurry about their removal, the danger of removing them too soon and by force being much greater than that of leaving them in until they are well loosened, and the bowel wall, with its tendency to slough has regained its normal tone. This cannot be safely counted upon until

ten days, or two weeks have elapsed.

As to the use of irrigation in these wide open cases, I have used it, and I have dressed them to a closure without its use. That the irrigation destroys some granulations and that the filling in is done more slowly by its use is very true, but there are filthy cases in which I believe that it is best and in return for the delay and the longer period in bed the patient gets a much more firm cicatrix, with less likelihood of an obstruction or a hernia afterward.

The application of the bandage in the after-care of drained abdominal cases, is a very important feature. This bandage affords protection to the abdominal wall, preventing undue laxity of its muscles, and favoring firm union where the incision is made.

The many-tailed bandage is the best one to be used because it can be adapted more snugly to the irregular outlines of the abdomen and pelvis and will stay in place with more certainty. In putting on the bandage it is best to have a nurse on the opposite side of the patient and with each tail drawn taut make the laps, *always from above down*, with the final one straight across the prominence of the hips. The laps should be drawn as tight as the dressing beneath and the comfort of the patient will allow and made secure by a good-sized safety pin, just within each iliac crest and a line of them up the center of the abdomen, just where the cross is made.

No two cases can be dressed exactly alike; the nature of the condition at the time of the operation and the distribution of the drainage, will separately govern each one. But the principle underlying all and the object in view, *remembering that the abdomen wants to put things out—this is its function*—and that we are only helping in a natural process, is always the same; the doing of just enough, and doing this with safety demanding thought, cleanliness and precision.

308 Masonic Temple.

ILLS OF THE MEDICAL PROFESSION*

BATTLE A. HOCUTT, M.D., Clayton, N. C.

There are men in the medical profession whose only goal is money. Of course in any vocation or profession money is a necessity. We need enough money to buy the necessities of life and besides we deserve enough to buy some of the luxuries, and some to salt down for the rainy day, old age, disease or misfortunes; but the man who enters the medical profession with no higher ideal than the getting of money should in justice to the profession enter some other field, profession or vocation. Our motto should be the motto of Rotary International, "Service Above Self."

The Ill of Betrayed Trust—A generation ago the medical man held the confidence of the people he knew and served as no other man in any profession. The doctor was looked upon as a very learned man with almost superhuman powers and a man to be consulted on political and community affairs; therefore he wielded an inestimable influence either for good or bad,—usually good. All along the line of progress as civilization has advanced, by virtue of this confidence, he has been given positions of responsibility and trust and in many instances he has betrayed that trust.

After the going of the dispensary in the second mammoth effort of society for prohibition the doctor was given the position of trust to save a drunken nation. He was asked and expected to stand four-square between society and the drunkard and thereby protect the helpless and prevent the results of drunkenness which inevitably and ultimately would result in a degenerate race. The government gave to the doctors through the druggist the handling of whiskey medicinally. They asked us to prescribe it as we would any other drug, when indicated.

In 1906 when I stood the State Medical Examination, I was entertained by

one of the older city doctors who was hospitable and likable. While waiting to hear the results of my examination I rode with him down the street; a thirsty crowd gathered about him, and I think in less than twenty minutes I saw him write prescriptions for Spts. Frumenti to twelve or more, charging fifty cents for each and getting the cash. He was betraying a trust. He was selling the medical profession and his character for a mess of pottage. With this trust,—the protection of society from drunkenness, we made a miserable failure. Society lost confidence in us, not individually but collectively.

The Ill of Illegal Operations—We of all men should be concerned in preservation of posterity. Our duty to society is when possible to relieve the sick, prolong life and preserve posterity. We have succeeded in relieving the sick and prolonging life but what about the preservation of posterity. At college we were taught and drilled in the non-interference with pregnancy unless the expectant mother's life was endangered by her pregnancy. Quoting from Hirst, "The induction of abortion should be undertaken as reluctantly as one would commit justifiable homicide. If, in the course of pregnancy some disease arises as a direct consequence of gestation, or if a woman suffering from disease is made much worse by the existence of pregnancy, and if her life is distinctly endangered in consequence, it is not only justifiable, but it is the physician's duty to terminate gestation, and thus save one life, and that the more valuable of the two, instead of sacrificing both mother and fetus." In spite of our drilling at college, our inherent sense of right and wrong, our conscientious duty to society and our gratitude to God, we are doing criminal abortions which will if continued demoralize society. There are doctors in North Carolina who will do this criminal operation for nothing more nor less than a price. I do not believe there is a physi-

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cian in Johnston County nor in the Fourth District who does or will commit this crime. But I do know we have doctors in North Carolina who are doing this criminal operation and getting by with it. Even if I had no sense of right or wrong, I would not take the chance.

The Ill of Giving Prescriptions for Dope—Our whole State was shocked at the recent developments of the investigation by Federal officers and the conviction by the courts of medical men here in our State right at our very door. The doctors who are true to their charge and the confidence placed in them by the national anti-narcotic law, allowing dope to be sold by a druggist only on a prescription written by a licensed and registered physician, have also been shocked and disappointed with the courts. We thought the penalty would be greater. Unless the penalty is greater doctors who are inclined to give dope for money and money only will follow the example of the blockader who makes and sells enough whiskey while out on bond to pay his fine. I am not in sympathy with these men and I congratulate our Medical Examiners on their recent action.

When the anti-narcotic law was first enacted the doctors in my town "right about faced" and called a meeting of our local society in which it was suggested that each physician write the name of every doper he knew in the community. As it happened there were five of these and five physicians. We put the names in a hat and each doctor drew a name and the name he drew was to be his patient. Before drawing names we had it understood that we could trade patients, if desired by both parties. We then most solemnly pledged ourselves one to another that we would not give the other doctor's patient dope, but that we would go to see him if called. We then saw our patients and asked them how much morphine they were taking weekly and we then and there wrote a prescription for this amount, stating to them that this amount must last for one week, that in one week to a day we would give them each another prescription. We cut the prescription each

week 10 per cent and they went along well, until it was reduced to half when they began to rebel and call for another doctor. The doctor called would go as promptly as possible, but absolutely refuse to give any narcotic, stating to him that arrangements had been made for him to get his supply from Dr. Blank and only from him. They continued to rebel more or less 'till they were convinced there was no use, and as a result every case was cured at home, outside of Keeley or any institution, and there is not to this day a dope fiend in or around Clayton.

My only sympathy for the doctors who have been convicted of giving dope promiscuously is that our government blundered when they passed the anti-narcotic law and did not make provision for the treatment of the then existing addicts, whereby they could be cured without suffering the agonies of the damned. There was only one recourse for them,—either appeal to a sympathizing profession for relief, or else drift and be a nuisance to the doctors everywhere and to society. One or two things should be done, the government must make provision for the treatment of fiends in institutions under strictest supervision, or the doctors in every city, town or community should come together and formulate some plan to cure this dope-cursed nation. In the event a fellow doctor should refuse to co-operate in the plan formulated he should be reported to the Federal authorities for observation and, if he or any doctor is caught and convicted by the courts for promiscuously prescribing narcotics, he should be automatically excluded from our societies.

The Ill of the General Practitioner Falling in a Rut—This is an age of specialization in medicine and as a result of this specialization the general practitioner has been losing ground and does not hold the confidence of the people he serves as did the family doctor a generation ago. We are now in a state of chaos, or a protoplasmic state, with specialists popping up here and there, jumping from limb to limb with a coconut cracker specialist here and a tail

amputator specialist yonder. Evolution going on all through the human anatomy from head to foot, and, as to whether or not we will be in the image of the old family doctor when this process of evolution is complete, is yet to be seen.

It was my privilege to hear the famous Dr. W. J. Mayo address the New York Academy of Medicine. In his speech he stated the time had been when one brain could hold all there was known about medicine, but that it was impossible for any one brain to retain all there is known about medicine today; therefore, the necessity for specialization. I repeat the public has lost some of the confidence it once had in the general practitioner and he alone is to blame for this state of affairs. He has worked too much and studied too little. With our rapidly advancing knowledge of medicine the doctor has not availed himself of the opportunities of post-graduate work as he should. This does not apply to all, but the general practitioner who has kept abreast with the advanced knowledge of medicine has had to suffer in proportion, as his fellow practitioners have failed to improve, since they are classed by the laymen as one and the same.

I have more than once been called to see a child suffering with some minor trouble with positive diagnosis made, and be asked on my second visit by the parents if I didn't think it best to call in a specialist. Now I don't want to be misunderstood. I am a believer in specialization, and I think in cases of gravity and especially in cases of doubtful diagnosis we should call in a specialist and let him help or share our doubt. The one great advantage the specialist has over the general practitioner is that he is usually located in a medical center with the conveniences of hospital, with its x-ray, laboratory and trained help.

I recall having, a few years ago, a case of Henoch's purpura. This is a very rare disease and this type of purpura is only seen in children. If you never saw a case a few of the classical symptoms will be interesting. The patient is taken with acute abdominal pains and almost immediately begins

vomiting blood and with frequent bloody stools, and passing bloody urine. This lasts for about a day and then there appears all over the body a purpuric eruption due to small subcutaneous hemorrhages; these symptoms then subside and the child appears much better, only to have a recurrence of the symptoms about every third day, over a period of a few weeks or more. I made a diagnosis and even took my text book, Stelwagon, with its typical description, showed the picture and read the symptoms to the parents. They wanted me to call a specialist, which I did.

The specialist came promptly and after greeting me, asked, "Well, Hocutt, what have you down here?" I said, "Doctor, I have a typical case of Henoch's purpura." The specialist said, "What's that?" I told him I had a typical description of the disease in Stelwagon, which I showed him and he read carefully. He then went with me down to see the little fellow and after a most careful and painstaking examination he turned to me and said, "You are correct, it is a typical case of Henoch's purpura. On your diagnosis you are to be congratulated." He wanted to take the child to the hospital where no treatment more than he had been getting could be given. Of course in this modern time of specialization I would want the specialist to match blood and do a transfusion, hoping for beneficial results.

Now to the point: I don't think it is practical for a doctor in general practice to match blood and transfuse; but if the general practitioner hopes to hold the confidence of the people he serves he must take frequent post-graduate courses and learn to do spinal punctures and do them dextrously for both diagnostic and therapeutic purposes, to give intra-peritoneal salt solutions to the dehydrated baby, to give to the depleted mother hypodermoclysis, and lavage and gavage the child when necessary; and try to teach the public that we are equipped and alert and that we are, next to the loved ones, more concerned about the results than any one else and that

we want the aid of the specialist when help is needed and that we will not be dilatory in calling for help.

Let's make the way so straight that only the "pure in heart" will aspire to

the medical profession and twenty years hence we will have a profession without a peer, and we will live in the hearts of the people we serve as did the profession a generation ago.

GOITER*

L. A. CROWELL, M.D., Lincolnton

It is useless in this discussion to go into the minute anatomy of the thyroid gland. Suffice it to say that the thyroid gland is composed of two lateral lobes connected by an isthmus. The gland has been likened to a dumbbell; the isthmus representing the handle and the lateral lobes the two balls. The isthmus covers the second and third rings of the trachea and occasionally extends upward in front of the trachea and sometimes to the thyroid cartilage, or even the cricoid cartilage. It should further be remembered that to the outer side and posterior to each lateral lobe covered by the sternomastoid muscle lies the carotid sheath containing the common carotid artery, the external jugular vein and the vagus nerve. The recurrent laryngeal nerves lie on either side of the trachea between it and the esophagus. The relation of these nerves should be constantly borne in mind as their injury produces a most distressing condition leaving the patient after operation in a much worse condition than before. The location of the parathyroids should also be thought of. They are small reddish bodies, situated between the lateral lobes of the thyroid gland and its capsule. These glands perform a very important function and therefore injury or removal should be carefully avoided in operations on the thyroid. If their location is borne in mind and ordinary precautions are taken there is little danger of their injury or removal. The role of the thyroid gland in the functions of the body seems to be that of producing a secretion that stimulates or whips up all the organic functions of the body, as

Crile says "giving them the kinetic drive." Crile likens the body to an electric machine and the thyroid gland in connection with the brain, adrenals and other ductless glands as the central batteries which furnish the driving force to all organs of the body. Crile in his enthusiasm has possibly gone too far in his theory, however if we study his works carefully we are forced to the conclusion that there is a great similarity between the human body and an electric machine. This gland has also been likened to the governor of a steam engine, which it resembles anatomically and physiologically. If the governor of an engine is out of commission the engine will run amuck, so if the governor of the human body, the thyroid gland, becomes diseased all of the organs of the body will be either over-worked or depressed, depending upon the pathology present.

The thyroid gland contains a larger percentage of iodine than any other organ of the body, this varying with the amount of iodine contained in the food or drink consumed. The chief function of the thyroid is to convert the iodine into a more complex substance called thyro-iodine or thyroxin, which was first isolated by Kendall in 1914 and is now synthetically produced and much used in the treatment of certain forms of goiter. If the thyroid gland, either by some interference with its proper functioning or from some actual pathological change, is unable to manufacture a pure thyroxin, the body metabolism will be interfered with in exact proportion to the purity of the thyroxin produced. A pure thyroxin acts as a stimulant to the functions of the body, while

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an impure or incomplete thyroxin plays the role of a poison, either over-working the functions of the body or depressing them, depending upon the type of thyroxin manufactured. This brief resume of the function of the thyroid gland should impress upon us the importance of a proper classification of goiters, if we hope to be able to treat them intelligently.

The time is not so remote when there was no attempt made to classify goiters into different groups or types. All growths or enlargements of the thyroid gland were simply classed as goiters by the profession and all were treated by iodine locally and internally. This impression still prevails in the lay mind. In reading the literature on the subject of goiter and visiting the different clinics over the country the most confusing thing has been the varied nomenclature used. It always appeared to me that every place I visited a different classification was used. This multiplicity of names has in the past been so confusing that one felt very much inclined to leave the subject severely alone, as it seemed impossible for one to acquaint himself with the significance of the complicated nomenclature. Recently many useless terms have been discarded thereby doing much toward simplifying the whole subject of goiter. In this discussion I shall adopt the classification which is now used at the Mayo Clinic, and with slight changes, also at the Crile Clinic. To my mind it is the simplest and satisfactory and embraces more than 98 per cent of all cases of goiter. The following is the classification used:

Colloid goiter or goiter of adolescence

Simple adenoma

Toxic adenoma

Exophthalmic goiter.

In this category I have not included those cases of congenital absence of the thyroid gland which produces the condition known as cretinism, nor those cases of atrophy or suspended function of the gland that occurs around the menopause which causes a modified form of myxedema commonly known as hypothyroidism with all of its concomitant

symptoms. These are the conditions that are so greatly benefited by the use of thyroxin or thyroid extract. This condition of hypothyroidism is a condition in which the metabolic machine is worth so much in making the diagnosis. In this connection and before beginning the discussion of the individual types of goiter referred to above, I desire to say a few words in reference to the use and reliability of the metabolic machine as a means of diagnosis, and especially in the cases referred to above where its value is inestimable; but as an indicator in the cases of hyperthyroidism, as to whether to operate or not operate, it seems that some of the leaders of the medical profession do not rely upon the readings very much. Crile does not use it at all for this purpose. I once heard W. J. Mayo say that he did not depend upon it as a criterion as to whether he would or would not operate. He said, "If the patient's pulse, after walking up and down a flight of stairs, does not increase over ten to fifteen beats per minute I consider it a safe case for operation." At the Mayo Clinic there seems to be some doubt as to the reliability of many machines on the market, many of these have been checked up and compared with the machine used at this clinic and have been found to be unreliable.

Colloid goiter occurs in young people around adolescence. It is soft, uniform and symmetrical in outline. It is an enlargement of accommodation; that is, it enlarges in proportion to the demands of the organism made upon it during the growing period, at or about the time the sexual functions are being established and the growing and developing body is in need of a larger supply of thyro-iodine. It is larger during menstruation and pregnancy. This type of goiter never becomes toxic.

This is the type of goiter that occurs around the Great Lakes where there is a deficiency of iodine in the food and drink. These are the cases that tend to get well of their own accord, however their disappearance may be hastened by the giving of Lugol's solution in ten drop doses, three times daily. It is a

rare thing for these cases to come to surgery and the only reason for operating on them would be for cosmetic purposes and then only after a most careful consideration.

Simple adenomas usually begin in early life and grow slowly, are irregular and nodular in shape, one lobe being larger than the other. Eighty per cent of simple adenomas become toxic later in life, and if iodine is given them, a much larger per cent will be converted into toxic adenomas. These cases should be treated surgically if the patient is worried or made uncomfortable by their presence and all of them should be operated on as soon as toxic symptoms begin to develop. There is no medical treatment for these cases.

Toxic adenomas as stated above follow simple adenomas as a natural sequence or may be converted into toxic goiters by the iodine treatment of simple adenomas. The toxic symptoms are due to an excessive amount of a normal thyroxin. Just what activates these glands and causes them to manufacture an excessive amount of thyroxin, thereby converting them into toxic goiters, in the cases that are not treated, is hard to satisfactorily explain except on the hypothesis that through the food or water taken they have gotten sufficient iodine to cause the gland to secrete an abnormal amount of thyroxin, or from some change in the gland itself which causes it to produce an excessive amount of thyro-iodine. As a rule toxic symptoms do not develop in adenoma for several years after the enlargement of the gland is observed. Toxic adenoma is strictly a surgical condition as there is no medical treatment.

In exophthalmic goiter there is usually a symmetrical enlargement of the gland. It may have a granular feel but as a rule it is soft, even cystic to the touch and may show on palpation an expansile pulsation. The size of the gland has no relation to the symptoms, a very slight enlargement of the thyroid may be accompanied by the most severe symptoms and vice versa. For a long while there was no distinction made between toxic adenoma and exophthalmic

goiter, both being simply classed as hyperthyroidism, with or without exophthalmos depending upon the presence or absence of the latter symptom. A great difference is now noted in these conditions. In exophthalmic goiter constitutional symptoms may be present for some time before any enlargement of the thyroid gland is noted, while in toxic adenoma an enlargement of the gland is present for a long time before toxic symptoms begin to develop. The toxic symptoms in adenoma are due to an excessive amount of a normal thyroxin while in exophthalmic goiter they are due to an incomplete thyroxin, or a thyroxin lacking in iodine. Therefore the toxemia from the impure thyroxin made by an exophthalmic goiter is more injurious to the organism and more promptly produces degenerative changes in the vital organs than does the normal thyro-iodine manufactured by an adenomatous goiter. An adenoma with toxic symptoms is like racing a gasoline engine with pure gasoline as fuel, while exophthalmic goiter is like racing one with an impure gasoline. In the first instance the engine would be damaged but not so seriously as in the latter case. Just as the thyroxin differs in toxicity in exophthalmic goiter from that in toxic adenoma, in the same proportions the constitutional symptoms produced will differ. The thyroxin manufactured by an exophthalmic goiter being an incomplete or impure product is more toxic and injurious to the organism and will therefore more promptly produce degenerative changes in the vital organs. These degenerative and pathological changes in the vital organs are manifested by the following symptoms: weak and rapid heart action, loss of flesh, hot flushes, tendency to sweat and tire on slight exertion, and later in the disease diarrhea and delirium. These patients as a rule have a ravenous appetite, and this with loss of flesh is always suggestive of exophthalmic goiter and should lead one to examine carefully for changes in the gland. These cases also at intervals have a remission of symptoms, in other words it appears that they have a tendency to cure them-

selves; this does not occur in toxic adenoma. Exophthalmos is not a constant symptom of exophthalmic goiter and is never present in toxic adenoma. The symptoms of toxic adenoma differ from those of exophthalmic goiter in being milder. They are less nervous and degenerative changes are less and appear later in the disease.

Treatment

Colloid goiter is the only type of goiter that receives any permanent benefit from the use of drugs. Medical treatment, especially the use of iodine as stated above, may do great harm in simple adenoma and toxic adenoma. In March, 1922, Plummer began the use of iodine as a pre-operative remedy in exophthalmic goiter. As this line of treatment was so much at variance with the ordinary accepted theory as to the causation and treatment of exophthalmic goiter, the profession was rather slow to accept it and it was only after its beneficial results and been thoroughly demonstrated that it was accepted by the profession. It is given on the theory that the thyroxin produced by an exophthalmic goiter lacks one molecule of being a complete thyroxin and by giving iodine to these patients a complete or pure thyro-iodine is formed, which temporarily benefits these cases. I say temporarily because it has been found if the iodine treatment is kept up too long it fails to be of further help and may actually do harm. As a rule it reaches its maximum point of benefit in about two weeks. The iodine is given in the form of Lugol's solution in ten drop doses three times daily. This line of treatment is now almost universally used and has done much to lessen the operative mortality. Under its use these patients gain in flesh, their nervous symptoms are much improved, the tachycardia is greatly benefited, the basal metabolism in many instances is reduced from plus 60 to plus 18 within ten days to two weeks; in fact these cases are in every way improved by this line of treatment. Since the iodine treatment of these cases has been in use pre-operative ligation is rarely neces-

sary. All toxic goiters should be operated on as soon as toxic symptoms are noted, before degenerative changes in the heart and other vital organs have advanced too far. Early operation will stop further degenerative changes but will not correct those that have already taken place.

The mortality rate in all goiter operations has been much reduced in the past few years. This is due to several factors: First to a more careful differentiation of those that should be treated medically and those that should be treated surgically. Second to a more carefully and well planned pre- and post-operative care, and lastly to improved surgical technic. Most important in this respect is the advent of local anesthesia in operations for goiter, having a two fold advantage over general anesthesia. First interference with the recurrent laryngeal nerve can be more easily detected and its injury thus made less likely. Post-operative hemorrhage is practically eliminated by having the patient cough rather violently several times before closing the wound, frequently when the wound appeared dry this procedure has been followed by the discovery of bleeding points.

Crile in a recent personal communication reports one thousand and nineteen consecutive thyroidectomies done since March of this year with only one fatality, this patient dying of embolism. In our series of 35 cases we have had no operative mortalities. We had two cases of cancer of the thyroid, one of these we did not recognize as cancer before the operation; this patient died about six weeks after the operation from a return of the growth. The other case was in an old man, he had a very large tumor which was giving him a great deal of dyspnea from pressure. We did a decompression in his case which gave him immediate relief, but he died about two months later from exhaustion. In the interval however he had no further trouble with the dyspnea. Recently we have been doing most of our cases under a local anesthetic.

TREATMENT OF INFECTIONS OF THE HAND*

JOHN P. KENNEDY, M.D., Charlotte

Infections in the hand are so common, their treatment calls for such careful consideration of cause and location and the results are so frequently disappointing to the doctor and disastrous to the patient, that I think it well to consider their treatment at this time. From an economic standpoint alone this is an important subject as most of the severe infections occur in the wage earning class and loss of use of the hand, means the loss of means of earning a livelihood. Because of severe suffering caused by infected hands and the potential disability, the doctor should give the same care in its treatment as he would in the case of appendicitis.

Infections in the hand may be divided into three types, and these three types may have a different cause and require a different treatment. The types are lymphatic infections, tendon sheath infections and infections in the connective tissue. Lymphatic infections are nearly always due to streptococci. The tendon sheath infections may be due to either streptococci or staphylococci. There is often present a mixed infection, sometimes the result of careless treatment. Infections in the connective tissue are practically always due to the staphylococcus.

Lymphatic infections usually follow some injury such as a pin or needle prick on the palmar surface or furuncle of the back of the hand. The lymphatics are more numerous on the back of the hand and in fact the lymphatics from the palm pass through to the back of the hand to be carried up the arm. This in part accounts for the marked swelling seen early on the back of the hand. In this type of infection, the patient notices that the wound begins to pain him almost immediately after infection occurs and the pain is out of proportion to the size of the wound. Within a few hours there is consider-

able swelling and tenderness about the wound, marked swelling of the back of the hand and wrist and red streaks running up the arm. Systemic symptoms come on rapidly and are often pronounced. Epitrochlear and axillary glands soon become enlarged. This type of infection should be treated by splinting the hand and forearm and applying continuous hot, wet dressings to the entire extremity, magnesium sulphate solution being my preference. In this type the infection usually clears up entirely within a few days and leaves no disability. However, a few fulminating cases develop septicemia and prove fatal. Incision in this type of case before localization occurs serves to open up new lymphatic channels and thereby spreads the infection.

Infections of the tendon sheath may be carried directly by trauma or indirectly by way of the lymphatics or from a neighboring infection. The infection in direct injuries is usually due to the staphylococcus, while the secondary may be due to the staphylococcus or streptococcus. When the tendon sheaths become involved, there are three cardinal symptoms present. The wrist and fingers are slightly flexed and rather stiff, there is pain and exquisite tenderness corresponding closely to the involved sheath, and active extension is impossible and passive extension of the involved fingers causes extreme pain. The area of tenderness is best outlined by making pressure with some small blunt pointed instrument beginning well away from the involved area. Here early diagnosis is essential if a good result is to be hoped for. Incision of the tendon sheath is indicated as soon as the diagnosis is made. Poultices and temporizing allow the infection to spread, probably causing pressure necrosis of the involved tendon and rupture of its sheath with further spreading of the infection. Should rupture of the sheath occur, there will be tempo-

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rary improvement in the pain but one should no more be misled by this than by the cessation of pain following rupture of an appendix. On account of the extreme tenderness in the hand and its complicated anatomy, it is very essential that the patient have a general anesthetic. A tourniquet should be applied above the elbow so that one may have a bloodless field in which to work. With patient sound asleep and a tourniquet applied, it is essential that the surgeon be able to visualize the hand and to know definitely what he expects to do.

Let us briefly review the anatomy of the tendon sheaths. The flexor tendons of the three middle fingers have each a separate sheath which extends from the base of the distal phalanx to the proximal end of the first phalanx. In about half the cases the flexor tendons of the little finger have a separate sheath, but in the other half, the sheath is continuous up beneath the annular ligament in front of the wrist where it is called the ulnar sheath. In those cases in which the ulnar sheath is separate from that of the little finger, the two ends lie so close together that rupture may easily occur from one into the other. The ulnar sheath likewise surrounds the flexor tendons in the wrist that go to the three middle fingers but extends only midway into the palm. The sheath of the flexor longus pollicis begins at the base of the distal phalanx and extends up above the wrist where it is called the radial sheath. The radial sheath may communicate with the ulnar sheath, allowing infection starting in the thumb to pass to the little finger or vice versa.

An infected sheath should be opened the entire length to insure free drainage and here drainage tubes are not to be used for fear of necrosis of the tendons, but the wound may be kept open with vaseline gauze or rubber tissue for 24 hours. The sheath should be opened from the side and if necessary both sides of the sheath opened. Unless the infection is especially severe, the incision should not extend across the creases over the finger joints and the annular ligament should not be divided. Should division of the annular ligament be

necessary in order to obtain good drainage, the hand and fingers should be dressed in dorsal flexion to prevent prolapse of the tendons. Should rupture of the radial or ulnar bursae take place in the wrist, pus will begin to spread up the forearm and will be found to collect first on the pronator quadratus muscle where it may be reached by lateral incisions just anterior to the bone in the lower part of the forearm.

After proper incisions have been made, hot wet dressings of boric acid should be used and the dressings should be light, so that active and passive motion may be practiced from the beginning. The wet dressings should not be continued longer than two or three days, for the tissue tends to become water logged causing round cell infiltration and excessive granulations which tend to increase scar tissue. Baking and electric light treatment to cause an active hyperemia several times a day is distinctly beneficial and during such treatment active motion is more easily carried out. It is very important that these cases should be dressed aseptically for fear of getting a mixed infection. The prognosis as regards function is distinctly better where the infection is due to one organism than where contamination has occurred. Dr. Matthew Cleveland of New York reports four cases whose cultures showed streptococci in the beginning and later became contaminated, with a secondary flare-up in the condition and an increased amount of disability.

The third type of infection is that occurring in the connective tissue, is usually localized, develops rather slowly and is caused by the staphylococcus. There are three places in particular where these infections are apt to occur: in the pulp of the distal phalanx where it is known as a felon; about the edge of the nail where it is called paronychia; and in the tissue spaces of the palm where it forms palmar abscesses.

The distal phalanges are especially liable to injury and here again it is interesting to review the anatomy. The pulp of the finger is made up of strands of connective tissue which run from

the skin perpendicularly to the periosteum and between these strands is a considerable amount of fat. Infection in the pulp is unable to spread except along the strands of connective tissue which carry the infection directly to the periosteum where necrosis very soon begins before a great amount of swelling in the finger has occurred. The bone of the distal phalanx is made up of a diaphysis and an epiphysis, each with its separate blood supply. The epiphysis is the proximal end and enters into the formation of the joint and has the attachment of the deep flexor tendon in front and of the extensor tendon behind. The blood supply of the diaphysis passes through the finger pulp while the blood going to the shaft of the bone does not pass through the pulp. When infection occurs in the pulp the intense pressure blocks the blood going to the diaphysis and renders necrosis much more liable to occur. Thus it is that in a bone felon the shaft is often lost while the epiphysis remains and continues to function with the attached tendons. I recently had occasion to remove the necrotic shaft of the distal phalanx and found it almost completely separated from the diaphysis which I did not disturb. This patient has a club-like distal phalanx but a fair amount of motion in the distal joint and a useful finger. A felon should be opened from one side, or both, and in severe cases the two incisions may be joined over the end of the finger in the shape of an inverted U. This cuts the connective tissue spaces at right angles giving free drainage, and at the same time does not interfere with the sense of touch.

In paronychia the infection soon gets under the edge of the nail and involves the matrix. In such cases the portion of the nail overlying the infection should be removed to allow drainage, care being taken not to injure the matrix, or else the new nail will be deformed. Beginning infection about a hang nail is best treated with alcohol dressings, kept wet by means of cotton saturated with alcohol and covered with a rubber finger cot.

Deep infections of the palm are sec-

ond in importance only to those of the tendon sheaths. The deep palmar fascia is attached by means of a septum to the second metacarpal bone and by another septum to the fifth metacarpal, thereby making three separate compartments in the palm. The one between the third and fifth metacarpals is known as the mid palmar space. The one to the outer side of the third metacarpal is known as the thenar space, and the one to the inner side of the fifth metacarpal is known as the hypothenar space. The hypothenar space is superficial and relatively unimportant. The mid palmar space lies between the deep flexor muscle and the interossei muscles. The thenar space lies on top of the adductor muscle of the thumb. Abscesses in these spaces should be diagnosed more upon localized tenderness over the spaces than upon swelling, for the palmar fascia will not allow any great amount of swelling until the fascia itself has been broken through. Marked swelling will always occur upon the back of the hand and one should not incise the back on this account. Drainage of the mid palmar space is best accomplished by incising the web to the inner side of the ring finger and passing a pair of artery forceps up beneath the flexor tendons just anterior to the metacarpal bones. The thenar space may be drained after the same manner by making an incision along the side of the second metacarpal bone and passing a pair of forceps over the edge of the adductor muscle. This method avoids injury to the tendons and to the palmar arches.

In any case where the character of the infection is such or the location is such as to make impairment of function probable, it is best to place and keep the hand in what has been described by Kanavel as the position of function. The wrist is cocked back at an angle of 45 degrees. The fingers are partly flexed in the position of rest. The thumb is abducted from the fingers and is drawn toward the ulnar side with the palmar surface of the thumb pointing toward the fingers. In this position with even a slight amount of motion in the thumb

or the fingers, the patient can do a surprising number of things, such as buttoning his clothes, tying his shoes, counting money or holding a pen. In order to keep the hand in the position of function, it may be necessary to use splints, but such splints should be changed often enough to prevent any loss of motion.

Summary

1. Severe hand infections constitute a major surgical problem and call for accurate anatomical knowledge and conscientious care on the part of the attending surgeon.

2. Hand infections fall largely into one of three classes: lymphatic infections, tendon sheath infections and infections of the connective tissue.

3. Lymphatic infection is best

treated by hot, wet dressings, and should never be operated upon unless it localizes.

4. Tendon sheath infection should be opened at once and the entire sheath should be drained, extending the incision above the wrist if necessary. Aseptic after treatment will prevent mixed infection which produces greater disability. Active and passive motion should be begun as soon after the operation as possible.

5. Connective tissue infections should be opened promptly and properly to prevent their spread to adjacent tendon sheaths, bones or joints.

6. A badly infected hand should be kept in the position of function, as this gives the greatest usefulness where motion is limited.

505 Professional Building.

FRACTURES: GENERAL CONSIDERATION*

J. S. GAUL, M.D., Charlotte

When one attempts to write about a condition so old, and so frequently encountered, as fractures, one must endeavor to determine if he is justified in his undertaking.

A recent survey of fractures made by a committee from The American College of Surgeons reveals the startling fact that only 46 per cent of patients treated had good functional results.

The greater percentage of suits against physicians, alleging malpractice, have been filed because of the poor results obtained in the treatment of fractures.

The field of fracture surgery, with such results as those noted, provides opportunity for improvement over the methods now commonly used.

It is with the hope that a stimulation of the desire to obtain better results may be brought about that I have undertaken a series of articles on fractures. If such result, my effort will be

justified.

There are factors, the thorough understanding and appraisal of which vitally determine the result in any given fracture. I refer to the type of fracture, its location, its associated pathology, and the age and condition of the patient.

Referring to the types of fractures, we consider them as simple, compound, comminuted, complicated, pathologic and special. I desire to emphasize the importance of the complicated, pathologic and special fractures. When we say a fracture is complicated we mean to infer that some other tissue is involved. A fracture through the joint limiting structures at once is recognized as of a serious nature, for when recognized and properly treated may result in markedly compromised function. It is important in treating any fracture in or about a joint, that accurate information be had of the existing relations of the parts of the limiting structures of that joint, and if abnormal that they be restored to normal. In other words

*This is the first of a series of articles by Dr. Gaul on the subject of Fractures.

there must be a clear and unobstructed joint space and unobstructed function of the structures gliding over that joint.

The complication may consist of insult to muscles, tendons, tendon-sheaths, fasciae or ligaments, resulting in their adhering to other structures, producing a disability in proportion to the importance the involved structure may have in the exercise of its function. The interposition of any of these structures between the bone fragments may have a very definite bearing on the healing of the fracture.

Nerve tissue may be involved immediately at the time of fracture from laceration by the fragments, or from the fracturing force, or it may follow later as the result of adhesions or callus incarcerating the nerve; the sensory and motor paralysis and the trophic changes resulting depending upon the nerve tissue involved and the point in the course of the nerve where the involvement takes place.

When blood vessels have been involved disastrous hematomas may occur, and if the blood vessel injury be associated with a compound fracture, life itself may be threatened or serious secondary hemorrhage result. The more common unfavorable outcome is the production of fibrosis with subsequent contractures. Myositis ossificans may follow. Should the fibrosis occur in muscular tissues and particularly in the flexor muscles of the forearm the dreaded Volkmann's contracture may be the predominating pathology. The partial or complete destruction of the blood supply to the bone may determine either delayed or incomplete union. Fractures occurring in hemophilia patients may prove exceedingly troublesome.

Pathologic fractures are encountered in the malignant diseases, particularly carcinoma, myeloma, the cystic degenerative diseases of bone, destructive types of osteomyelitis and tuberculosis, syphilis, rachitis, tabes dorsalis, syringomyelia, fragilitas ossium and osteomalacia.

There are fractures which merit spe-

cial consideration such as the compression fractures of the os calcis and the vertebrae, Bennett's fracture of the thumb and fracture of the coracoid process of the scapula. These will be treated more fully later in the paper.

The location of the site of the fracture is exceedingly important particularly with reference to its relation to the origin and insertion of the muscles that will activate the fragments. Careful consideration should be given to this detail, for the aligning of the fragments largely depends upon this knowledge. Failure to observe this precaution results in disability from loss of pronating and supinating power in the forearm and loss of adducting and abducting power in the arm and leg. A common deformity seen in fracture of the lower half of the femur is bowing from the tremendous tracting power of the adductor group of muscles. A sequela to this deformity is derangement in the knee joint from the unusual thrusting strains placed on such a deformed leg.

The accompanying associated pathology in fractures has a very important bearing on the result to be obtained. Associated malignancy, the severe forms of anemias, low calcium or phosphorus content of the blood, the bone dyscrasias, or the cystic degenerations of bone will offer serious impedimenta to securing union. Syphilis, tuberculosis, osteomyelitis, malaria and diseases of the thyroid gland may prevent, or cause delay in union with excess of soft callus formation, unduly prolonging convalescence. Associated chronic alcoholism with the probable onset of delirium tremens should be fully considered. Such a complication makes difficult the management of the fracture. Pneumonias in the very young or in the aged should be expected and detected early. Gangrene from obstruction of the circulation, either from direct involvement at the time of fracture or as the result of pressure applied by the physician through splints or bandages, or, as the result of trophic changes, as in decubitus ulcers, presents a distress-

ing complication. Shock, hemorrhage and trauma to viscera are complications demanding immediate recognition and treatment.

Age is an important factor, usually being favorable in the young and unfavorable in the aged. Union in the young is more rapid and more firm. Even with poor position in the young, Nature will bring about a deposition of bone and largely correct many deformities. Fractures about joints have a better prognosis in the young because of the excess of cartilage over bone in those joints. With the aged are to be expected fragility of bone, sclerosing tendencies, lack of the regenerative properties in the bone, cardio-vascular-renal disease and hypostatic and trophic changes.

Fractures occurring in the first two decades of life, not accompanied by much pain, should make one suspicious of the presence of a bone cyst, rickets, osteomalacia, fragilitas ossium, and primary sarcoma. Such fractures occurring in the third decade should place

one on guard for the presence of sarcoma, metastatic hypernephroma, carcinoma and myeloma. After the third decade one should suspect metastatic carcinoma.

The accurate diagnosis relating to a given fracture requires a careful history, a careful examination and a complete x-ray study. With such accurate information as will be thus obtained one is best prepared to apply his individual skill in the treatment of the fracture. Without carefully observing these details one has no moral right to ask a patient to assume confidence in a careless method of treating his fracture.

Unless the profession profits by its mistakes of the past there can be but little improvement over the results now obtained in the treatment of fractures.

In subsequent articles it will be the endeavor to discuss fractures in the various bones; to emphasize the important factors in each, and to bring to attention the more approved methods of treatment.

15 West Seventh Street, Charlotte, N. C.

THE MEDICAL JOURNAL A NECESSARY ADJUNCT TO THE SURGEON AND THE HOSPITAL*

JAMES M. NORTINGTON, M.D., Charlotte

The invitation of your Secretary to say something about medical journalism found me in a very responsive mood. I could talk freely and at length for I am little handicapped by a knowledge of my subject. My becoming a medical editor was very much after the fashion of the metamorphosis of Dr. Geo. Ben Johnston's blacksmith into a surgeon. I simply declared myself one. The then editor was appointed to a position with the State Board of Health, necessitating a transfer to Raleigh, and I was the only medical man in Charlotte who didn't know better than to take a charge of a medical journal. That's how it came about.

Now, I shall not weary you with a history of the development of medical journalism. It is self-evident that, in order that one's work shall be known, he must have an avenue of publicity. Commercial and trades people avail themselves of the pages of the newspapers and lay magazines. Professional men cannot, with dignity, make use of these. In some county newspapers doctor's cards have been carried. Several years ago I recall seeing on one page:

"Dr. Smith—office over X's Drug Store. Calls answered promptly."

"Dr. Jones—office over Y's Drug Store. Calls answered promptly. Night or Day."

"Dr. Brown—office over Z's Drug Store. Calls answered promptly. Night or Day. Town or Country."

*Read by invitation before the meeting of the North Carolina Section of the American College of Surgeons, Pinehurst, April, 1925.

This illustrates the fact that professional men find it impracticable to make this kind of bid for patronage; that it is unwise for doctors to use the daily papers (at least the advertising sections) for advertising purposes; and that there is a reason for this based on something more than a quixotic conception of professional dignity.

Still it is the doctor's duty to himself and the public to make known his special qualifications for treating sick persons and the facilities offered by his institution. I believe Emerson is credited with having said, "If a man preach a better sermon, write a better book or make a better mouse trap than his neighbor, though he make his home in a wilderness, the world will make a beaten path to his door." Emerson had much more to do with preaching sermons and writing books than making mouse-traps, and preaching and writing are certainly the most valuable and valued means of publicity. So it would seem that a statement which might at first glance appear to really say something, is "knocked into a cocked hat," if I may quote the earnest hope expressed by Woodrow Wilson as to the perennial W. J. B.

The great clinics,—university and private, have been built up through meritorious work, plus publicity. Is there one of you who believes that the clinic of Johns Hopkins or the Mayos could have been built to its enormous proportions without intelligently directed publicity;—even without the Johns Hopkins Bulletin and the Collected Papers of the Mayo Clinic? And these probably do not represent a hundredth part of the total pages sent out to medical men from these institutions.

We doctors of the South have been very loath to publish. Undoubtedly part of this was, and is, due to laziness and another part to a very fitting sense of the worthlessness of some of our productions. However, much which we have done and are doing is valuable. Some of this never sees the printed page, and so, is lost to medicine; some goes to the established, opulent jour-

nals of other States and sections, and a modicum to medical journals published locally.

Singularly enough, in my very brief experience in this field, the very biggest men in the profession in other parts of the nation have invariably responded with the utmost alacrity to requests for original articles. It is obvious that they realize the value of publicity and that, notwithstanding the great impetus they have gained by their own work, and their teaching and society connections; in order that there may be no waning of their prominence in the medical world, they realize that they must use the medical journal often.

The use of the advertising columns of medical journals by hospitals is perhaps the rule. But in this section there appears to be some opinion that there is a certain indelicacy about the placing of a professional card in a Physicians' Directory in a journal. How can it be considered on the one hand right and proper for Dr. A., who has a hospital, to advertise his surgical or neurological institution; and, on the other, improper for Dr. B., who is just as good a surgeon or neurologist and can hospitalize his patients just as well, albeit the institution is not personally conducted by himself, to carry a card making known any or all these facts.

In addition to the general principle involved, we have the specific examples of the practice of men of the highest standing in our national association. Current numbers of four officials state journals picked at random from my exchange table show, in each case, a "Physicians' Directory" in which are carried cards setting forth the specialty, office hours, etc. This is certainly of marked service to doctors and patients; and when, as in the Rhode Island Journal, a Dentists', Druggists', Nurses' and Masseurs' Directory are also carried its value as a source of information is greatly enhanced. Many more of our patients who need massage would get it if we were constantly reminded of the availability of this treatment,—and without passing into the hands of an

irregular. Each of us has need more or less frequently of male nurses. The names of a few of these carried in a directory would bring to mind the possibility of obtaining their services, and a mutually profitable arrangement would be effected.

Probably some will think only the insignificant and unknown members of the profession make use of cards in these directories. In the Rhode Island Medical Journal a card is carried by the Secretary of the State Medical Society; in that of Kentucky by Dr. Louis Frank, President of the State Society; and in

the New Orleans Journal, which is the official organ of the Louisiana and Mississippi Societies, Drs. Allan C. Eustis, Randolph Lyons, Wm. Scheppegegrell and Rudolph Matas are listed.

These are some of the ways in which the medical journal can be made more useful to the surgeon and to the hospital.

The surgeon and hospital can reciprocate by patronizing our commercial advertisers, double spacing all the copy sent in for publication and by choosing one way to spell programme, albumin and technique—then sticking to it.

SKETCH OF TUCKER SANATORIUM, RICHMOND

Recognizing the need in Virginia for a sanatorium for the treatment of private cases of nervous diseases, Dr. Tucker rented in 1912 the house at 102 East Grace Street and organized what was then known as the Neurological Sanatorium. In 1915 this arrangement was found inadequate and the property at the corner of Madison and Franklin Streets was purchased and the name changed to the Tucker Sanatorium. A large four-story addition was built and the old mansion remodeled. In 1916 the capacity was still further enlarged and in 1919 the house next door was purchased as a nurses' home.

The Tucker Sanatorium is situated on the northwest corner of Madison and Franklin Streets, just one block above the Jefferson Hotel in and old time garden of trees and shrubbery in the very center of Richmond. The hospital is for the care and treatment of nervous and endocrine cases, and has departments of hydrotherapy, electricity, massage, occupational therapy and a well equipped laboratory. The Sanatorium conducts a training school for nurses and the nurses have a comfortable and commodious home.

The staff consists of Beverley R. Tucker, M.D., R. Finley Gayle, jr., M.D., Howard R. Masters, M.D., and Miss D.

Gil-Martin, Superintendent. There are forty-five beds and all private rooms.

Many interesting and even historical associations hover around the Tucker Sanatorium property. The original house, now forming the central part of the front of the building, was a magnificent country residence built in 1803. The house has been insured with one fire insurance company for over a hundred years. In 1812 James Monroe lived in this house, and still growing in the yard is a grapevine he brought from France and planted. From this vine the Norton seedling grape has sprung.

After the War between the States, General Bradley T. Johnson made this house his home, and the memory of his delightful and lavish social entertainments lingers yet in the minds of many of Richmond's older inhabitants. Since his day the house was added to by other owners.

Much of the original beauty has been preserved, as the stately proportions, the splendid hardwood floors, the handsome mirrors, the long French windows of the semi-octagon dining room (now the arts-craft room), and the magnificently hand-carved mahogany wainscoated offices (formerly the library) will testify.

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*A journal for the promotion and diffusion of
usable medical knowledge.*

For Fighting the Charlatan and His Partners

"The man who knows" seems to have placed undue confidence in his knowledge. According to a recent newspaper account a suit in the amount of \$30,000 has been filed against this wonder-working "Indian herbologist," who came among us as a curer of psoriasis and soon expanded into a sort of universal specialist.

It is understood that, through some quirk of the law, it was assumed that this person was not engaged in the practice of medicine, but was only a vendor of drugs. The complaint in this suit sets forth that the defendant made several visits to the plaintiff's home. Presumably those were not social calls. It is further stated that the sum of \$89 was paid for medicines and treatment.

This suit is not being brought under the medical practice act. Apparently, if this one "patient" had happened to have recovered or to have died, Nanzetta would never have suffered any inconvenience from his activities in Charlotte, except perhaps some of the cares which are said to attend the possession of much wealth.

No part of our law enforcement ma-

chinery took cognizance of what would appear to one lacking acquaintance with the sophistries of the law to be a flagrant violation of the letter and spirit of all the Acts of Legislature designed to regulate the practice of medicine, and prevent the ignorant and vicious from preying on the ignorant and sick.

The Law says that one who would treat the sick of this State must present a diploma from a reputable medical college and a certificate of good moral character, pay a substantial fee for the privilege of being passed on by a Board of Medical Examiners, successfully answer (or parry) their questions; and, having gotten thus far, pay another substantial fee for license.

Custom (often more binding than the law) says he must contribute, with money, to the support of every supposedly worthy cause in his community, and even as far away as Korea and the remote isles of the sea; besides contributing services to any and everybody at any and all times, not even excepting the Nanzettas, Eddyites and Chiropractors, who are exerting themselves to the utmost in injuring us and our patients by carrying on a continuous warfare against the proven facts of medicine.

Frauds come in; do what everybody but lawyers call practicing medicine; and,—notwithstanding their failure to even pretend to present diplomas or certificates of character, to stand examinations or to pay license fees,—go unmolested except by swarms of the ignorant sick, who, attracted by the utterly preposterous claims circulated by the newspapers at so much per line, crowd in to lay their dollars and their lives in the hands of these mountebanks.

The ostensible object of the law in this case is to protect the citizenry's health. The State does not accept the diploma of Hopkins, Harvard, Oxford or Paris as sufficient evidence that one who wishes to be privileged to advise its people in matters of health is qualified for the job. It submits him to examination at the hands of a group of its own doctors.

But a nobody comes from nowhere,

advertises in the newspapers that he will be at one drug store for a certain week and at another for the next week; receives victims, inspects them, asks them questions, tells them they have certain diseases and that certain mixtures,—of his own and the composition of which is a secret,—will cure them; sells the nostrums at outrageous prices, pays calls to his "patients," and gets by with it.

This is plainly practicing medicine, with the addition of loathsome features which would not be countenanced by the average abortionist or drug peddler. These two are frank in their dealings. They do not pretend to be inspired by God or to have any mysterious knowledge or power; and their results are usually just what their clients pay for and are promised.

If there be a law competent to deal with these frauds, let us ascertain whose is the duty of enforcement and then see that it is enforced.

If no such law exists (although groaning already under the burden of the multiplicity of laws), let us make this one more and stop.

And let us make it plain to the druggists who harbor these pirates, and the publishers who circulate their claims that we know no difference between the originator of a swindle which is certain to result in the loss of life, and those who enthusiastically help in the perpetration of this swindle, for a share in the plunder.

Barret, Research Worker

It is proverbial that, "A prophet is not without honor save in his own country." The editor has received a communication from a distinguished New York pediatrician calling attention to the fact that one of our own men was nearer than any other to working out a successful protective inoculation against a disease which ranks second as a slayer of children in this section.

Imagine the headlines which would have adorned the front pages of metropolitan newspapers had this been given to the press!

In the September issue of this jour-

nal a very modest,—in fact untruthfully modest, preliminary report is made of this work. We are glad that a detailed report is promised.

Some idea of the importance of this research may be gained from a consideration of the fact that this disease has caused nearly nine thousand deaths in North Carolina in the past six years. Consider what it would mean to the State, and to the mothers and fathers within its borders, to save seventy-five to ninety-five per cent of the fifteen hundred children, whose deaths could be confidently expected in 1926, of *bacillary dysentery*, masquerading under such names as *colitis* and *summer complaint*, but for this brilliant piece of work by Dr. Harvey P. Barret.

For Closer Inter-Racial Relations

One of the best periodicals which comes to this desk is the Journal of the National Medical Association, which association is made up of physicians, dentists and pharmacists of the colored race. The negro doctors of North Carolina evidently take high rank in the councils of this national organization, as shown by the selection of a Durham doctor for the position of general secretary and business manager of the association's journal.

It is a matter of regret to thoughtful doctors that, generally speaking, no plan has been worked out for including the colored doctors in our programmes for developing and diffusing knowledge of medicine in our State.

It is manifest that this is to be deplored. The number of persons in North Carolina dependent on colored doctors for medical care is by no means insignificant. These are worthy of the best of care for themselves. Most of them come into intimate daily contact with the whites, many as nurses or other household attendants; which makes control of infectious diseases among the members of the two races a common cause.

Many of the medical schools open to negroes are (or have been) poorly equipped, and, consequently, many grad-

uates have been sent out inadequately trained. On the other hand, many are graduated from the very best schools of the country. Those who have been denied first class training need to have their deficiencies supplied by attendance on medical meetings and by free and full conference with other medical men in their respective localities. Those who have enjoyed thorough training wish to keep abreast with medical progress and to be thus enabled to give their patients the best care which thorough information on recent developments makes possible.

We believe that the health interests of both races demand that some arrangement shall be made by our county medical societies,—certainly in those meeting in the cities of the State,—by which the colored doctors shall be made to feel free to attend and participate in the deliberations.

We believe that it can be done with help to all and hurt to none, and that this action on the part of the medical men of the State would be the means of enhancing greatly the very friendly and trustful feeling already prevailing between the whites and negroes of North Carolina.

Tulane's Graduate School of Medicine

Since the generous bequest of Paul Tulane made possible its foundation in 1884, Tulane University has enjoyed an enviable rank among the country's institutions of higher learning.

Its College of Medicine was born in 1834 as the Medical College of Louis-

iana. It became the medical department of the University of Louisiana in 1847, under which name it functioned until Tulane University came into being.

Through all these phases the school has given instruction of the highest grade as judged by the standards of the time.

Recently there has been organized, as an integral part of the College of Medicine, a Graduate School of Medicine, under such auspices as to assure an honorable and useful career.

The schools giving to physicians courses of a few weeks or months have served a useful purpose, and will continue to supply a need, since the passing of those which required only the payment of a fee and enrollment, and gave a gorgeously engraved certificate at the end of the three or six weeks course. But the Graduate School, well equipped with personnel and materiel, and conducted as an integral part of a University of the first grade, discharges a higher function. It affords intensive instruction over a long course, at the completion of which, a degree in a specialty is conferred. And this degree really means that its recipient is especially well equipped in that line.

Each section of the country should have an active interest in the upbuilding of itself. When we can obtain at home wares we desire, of as good quality and at as good price as other sections offer, it is plainly our interest and our duty to stick to our own. And New Orleans has a charm all *its* own.

DEPARTMENTS

UROLOGY

A. J. CROWELL, M.D., *Editor*
Charlotte

The Development of Genito-Urinary Surgery as a Specialty; Second Article

In an article like this it is impossible to go into details, giving dates of accomplishments in urology and their significance; therefore, I will be content to give a brief on the progress made during the twenty-four years I have served as a urologist.

Thirty years ago our greatest surgeons looked upon prostatic surgery with much disfavor. I remember having taken a patient, who was suffering with retention of urine due to prostatic hypertrophy, to one of the world's greatest surgeons, at that time, in the hope that he might remove the gland and relieve the symptoms. Instead, he advised that I take him home, use the catheter, give him plenty of morphine, and let him die easily. He thought the operation too dangerous, and the results inadequate to justify such a procedure. Of course, this was before the days of Nitzen, Frayer, Young, Guiteras, Lewis, Cunningham, Fuller, Israel, Keys, and others, whose marvelous work and results obtained inaugurated a new era in prostatic surgery.

Twenty-five years ago the fatalities following prostatic surgery were about twenty-five per cent, to say nothing of the morbidity following operation. Today the former is about two percent, and the permanent results very gratifying.

During the six months,—twenty-five years ago,—I spent in New York City, in an effort to obtain knowledge and experience in genito-urinary diagnosis and genito-urinary surgery at the Polyclinic and Post-Graduate schools, I wit-

nessed one cystoscopy, and one prostatectomy. The latter was done by Bissell, at the Bellevue Hospital and the former by Chetwood, at the Polyclinic. Of course, I got nothing out of either of these,—just sat on the roost and watched them perform. I did, however, see Dr. Chetwood do several cauterizations of the prostate through a perineal opening. This operation was known as the Chetwood Prostatic Cauterization, and designed to burn a groove through the gland to facilitate bladder drainage. This operation did not meet with great favor and was soon abandoned.

Leaving New York somewhat depressed and greatly dissatisfied with knowledge obtained there I sought light at the Johns Hopkins Hospital. Here I witnessed a few cystoscopies and endoscopies, but no prostatectomies or kidney surgery. The first ureteral catheterization I ever saw was done by myself, and the first report made of this work before our County Society brought very audible groans from at least two members of our society. Naturally, as a pioneer worker, such demonstrations and expressions of doubt were very noticeable to the speaker, and served as a stimulus to demonstrate this work and its value. I did, however, witness a post-mortem examination of an old negro by the name of Young, upon whom, Dr. Hugh H. Young had done a cauterization through the urethra by an instrument he had designed for this purpose—a supposed improvement on the Chetwood cautery. Of course, I bought one at a cost of about \$150.00,—to me a barrel of money at that time. I still have the instrument. I never used it, and it is not for sale.

The instructions received at these institutions in venereal diseases, were very satisfactory and especially at Hop-

(This series was begun in February and will be continued from month to month).

kings. In fact, I am convinced that it was practically as good as that given today. Their methods of diagnosis and treatment showed thought and great accuracy.

PEDIATRICS

FRANK HOWARD RICHARDSON, M.D., *Editor*
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Co-operation a Necessity in Achieving Results in Public Health Matters.

Cooperation is after all the keynote of success in public health projects. There is so much to be done for the health of the community, and so much apathy and inertia to be overcome, that it is only where all available agencies, both public and private, are brought to bear upon health problems, that much in the way of real gains can be made. It is therefore with real pleasure that this column chronicles a piece of real cooperation for the health of the children of one of our communities,—both for the encouragement of the community itself, and as a suggestion for others to act upon.

It is quite well known that the law of our state requires that the children in the schools have some sort of health examination at least once in three years. As it would be impossible to pay for enough medical examiners to cover the school population, it has been made the duty of the teachers to make such an inspection as can be made by laymen or laywomen, with the object of picking out some of the grosser cases of physical handicap, in order that these may receive some sort of remedial care. Needless to say, the examination leaves much to be desired, with this handicap; and it is ordered for want of a better method. The accompanying reproduction of one side of the 5x8 record blank* in use, shows that this examination, while a physical one, is not intended to encroach upon the field of the medical examination.

The other side of this blank is the form used by the medical examiner in his follow-up work with the children. Inasmuch as there is a school popula-

tion of some nine thousand children in the county in which the community we are considering is located, and inasmuch as these children share with the prisoners, the inmates of other public institutions, and the quarantine duties of the large county, the service of one lone health officer, it can readily be seen that the amount of physical examination to be secured by each of these nine thousand school children would be, under ordinary circumstances, rather meager, not to say sketchy.

Realizing the handicaps under which the authorities are placed in caring for the children of this community, the physicians resident therein determined to jump into the breach. Accordingly, these men communicated with the principal of the school and county health officer, and placed themselves on record as being prepared to do anything in the way of assisting these gentlemen, that they might desire. One can picture the astonishment of the recipients of such an offer! In this case, however, good intentions were not allowed to take the place of performance. Before the medical fraternity had recovered from the virtuous sense of public service engendered by generous offer the proffered service had been accepted; and plans were at once launched for putting across such a school examination as one does not often see. This is the "lay-out," in brief:

Heights and weights will be taken by mothers volunteering, or impressed for service, from the ranks of the Parent-Teacher Association. Expected weights for age-heights will be computed from the cards based on Wood's tables, available at a few cents apiece. Chest expansion, hearing, vision with Snellen chart, and condition, size of tonsils, mouth breathing, skin condition (including pediculosis), will be gone over by general medical men in the community, acting as volunteers, and at the same time affording the teachers an opportunity of seeing what is expected, in such an examination. All records will be charted by older pupils in the high

*See Page 633.

school grades, assigned to act as clerks. The doctors will thus be freed of the great bane of the medical man,—record keeping. The teachers, the principal, and the county health officer, will marshal the forces in such a way as to keep all occupied for the intensive hours devoted to this work.

For the special medical examination called for on the back of the card, the medical faculty is marshaling its forces with some care. It happened that in the case of a number of the points called for, it is rather well equipped. The town possesses three or four men who are on duty in neighboring tuberculosis institutions, government and private; and a cardiologist of repute from one of the big medical centers, here for his health, which was seriously shattered as a result of his service for his country during the late war. So the chest conditions should be pretty well looked after. The local branch of the Charlotte Laboratories, maintained in the town, has offered to do a stool examination on every one of the six hundred children; and to do malarial examinations of the blood in any suspected cases. The director of a neighboring sanatorium for mental and nervous disorders has agreed to go over any marked cases of mental retardation elicited as a result of the group tests for mental capability (as distinguished from educational progress) already being done yearly throughout this county. A dentist who is specially interested in children's teeth, will chart all defects, both those calling for orthodontal treatment and those needing ordinary dental attention. When the whole examination has been completed,—and judging from the experience gained in putting on a somewhat less complete thing of the same sort before, it is believed that this will take less than a whole school day,—it would seem as if a fairly complete purview of the individual child will have been attained.

This completion will, however, not be the end of the work, but merely its successful commencement. For a plan is on foot by which the follow-up work,

(whose questionable success has always been the Achilles' heel of the school examination movement), may be put across as thoroughly as the preliminary work. All children with defects believed by the physicians to be in need of correction, will be visited by the school or county nurse, who will explain to the parents the condition and the need for its correction. It is believed that the participation of the Parent-Teacher Association in this work, will render it far more efficient in producing results. In such cases as call for medical treatment, where the cost of medical treatment would be a burden, the family physician is to be asked to decide what percentage of the cost should be furnished free by county or charity funds. As the local county medical society has gone on record against having the State Tonsil and Adenoid Clinics put on in their territory, the request has been made for the services of competent nose and throat men, to volunteer for such clinics as the doctors in the community may decide to put on, to clean up this part of the work. Some funds for dental work for prophylaxis and simple cavity repair, will probably be made available later. Surgical and orthopedic work can be furnished by similar volunteering from the county medical society's ranks; and hospitalization charges can be met from county funds. Vaccinations and protective inoculations against diphtheria and typhoid will be made available later on in the year, as previously.

The spirit behind the plan, in effect, is one of service by the doctors of a neighborhood to the children within their own territory. Doubtless some problems may arise as to the financial responsibility of some of the parents. The good sense of the local profession, and of the county health officer, may be trusted to deal with these issues as they arise. The mere possibility of their arising is not scaring off a body of public spirited men who want the ideal of a sound mind in a sound body to apply to the children who attend their school. The fact that the school board has seen

the possibilities inhering in this project, and have given it their whole-hearted support, says much for the entente existing in this community between medical men and laymen. The plan goes into effect without one dissentient voice; and if unanimity of opinion spells success, the project cannot fail. It is something to be watched all over the state, by those interested in making our schools all that they can be.

MENTAL AND NERVOUS

JAMES K. HALL, M.D., *Editor*
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Crime and Modern Medicine.

The contemplative man who lends himself to consideration of crime and the criminal has little difficulty in reaching the tentative conclusion that probably no progress at all has been made by society in an understanding of so-called criminal behavior. The advocate at the bar is without desire for any conception of crime except that interpretation which may help him in an effort either to convict or to dismiss the prisoner before the court. The judge upon the bench is restricted in his view of abnormal behavior by what the law books may say. The assumption is safe that the average law-maker and the law-interpreter have seldom seen an insane or a feeble-minded person. The juror, as a rule, thinks that an insane individual is either a maniacal person who shrieks and tears things to tatters or else one who sits immovable and mute in stoic melancholy.

There is here and there always much talk about the motive that led to the commission of the act that is catalogued as a crime. But the legal conception of the motive—the moving reason—is only skin-deep, and generally no dignified and philosophic effort is made in the law-making body or in the court of justice to get back into the prisoner's deeper life-history to the fountain of all his behavior, good and bad. Most so-called crime must be a manifestation either of poor individual understanding or of de-

ficient self-control. Prevention of criminal behavior would imply, therefore, either the necessity for individual enlightenment or the development of self-restraint. Back of many crimes both the defects listed above may be moving factors. Individual necessity may lead to a breach of the law. The starving man may be forced to steal; the drink-crazed man may have to deal with the bootlegger; the father whose daughter has been tarnished may be driven to kill. There is probably no such being as a professional criminal, just as there is no such human as a drug fiend or an alcoholic.

But there are men and women and children who are brought repeatedly before the court for violations of the written law. But, regardless of what the charge may be, the fundamental fact back of most criminal behavior is a mentality different from the normal, and the crime is the momentary manifestation of the disordered or abnormal or defective mind. However tenderly and skillfully and efficiently the average drug addict be treated the resultant human being is generally not quite a normal person and for that reason the addiction is acquired again. Primarily, the addiction is not causative of mental abnormality; it is only the exaggerator of an inherent mental or emotional unsoundness. The same medical reasoning is applicable to the alcoholic—especially the periodic drinker.

The human mind—there probably is no other kind—is practically that attribute which enables one to attempt to adjust himself to his surroundings. The manifestations of these attempts is behaviour. If the adjustment be satisfactory, the assumption is that the mind is sound; if the attempts at adjustment be unsuccessful, the conclusion is that the mind is not functioning properly. Deviation from normal behavior is an exhibition of mental abnormality; if profound and prolonged the condition is known as insanity. Inherent or acquired failure to measure up to mental normality constitutes feeble-mindedness.

The insane behave insanely and the defective in mentality behave as little children. Out of these two great fountains flow criminality, drug addiction, alcoholism, ignorance, vice, vagabondism, prostitution, degradation, and final failure. Prison reform, revivals, pronouncements, commissions, chain gangs, balls and chains, lashings, solitary confinements, life imprisonments, probations, hangings and electrocutions have no effect:—all these things, and more, are as futile as treatments as the application of vaseline to the skin as a remedy in small pox.

Crime is the symptom of a disorder of the mind. The statement has reference to acts regarded as criminal by all thinking men, and not to simple statutory enactments. The sound-minded man in possession of himself kills probably only in defense. But behavior, be it good or bad, is the individual's expression of himself, and its purpose is to adjust himself to his particular universe, and to help himself along. If his reasoning be good, so will his behavior be, and its results will be beneficent. But if his reasoning be bad, so will his behavior be, and it may be criminal.

The corrective and the charitable institutions of the United States house at the present moment not less than a million persons; the care of them consumes a quarter of the state's total revenue. In prevention, in lessening the daily influx into these institutions the results are of no account. Jails and penitentiaries are packed. New prisons, strong and architecturally attractive and imposing, are pointed to with pride by municipalities and by counties. They avail nothing. The words are written upon sand and upon moving water. Crime is a medical problem. It must be diagnosed by medical men; its treatment must be by medical men; efforts looking to its prevention must be taken hold of by the doctors. Judges know nothing about it; lawyers know nothing about it; juries are profoundly ignorant of its import. Every medical organization should have a crime commission; every medical student should be taught the

meaning of crime; and the constituted medical body of each state should gradually and aggressively begin to assert that crime belongs where other behavior disorders properly belong—in the domain of modern medicine.

LABORATORIES

HARVEY P. BARRET, M.D., *Editor*
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Spinal Fluid Examination.

Examination of the spinal fluid is of importance as a diagnostic aid in infection of the brain and spinal cord and the meninges, and in certain other diseases of the nervous system. It is one of the few laboratory examinations in which a diagnosis can be made positively and often without any other clinical procedures.

The fluid is obtained by puncture of the space between the fourth and fifth lumbar vertebrae. A small needle with a stylet is most commonly used. The needle is sterilized and the site of puncture is painted with iodine, and all sterile precautions should be taken as in puncture of a vein. After discarding the first few drops, in order to get rid of any blood present, the fluid should be collected in several sterile tubes about one c. c. in each tube except that used for the Wassermann test. At least three c. c. should be taken for the Wassermann test. The various tubes are to be used for one or more of the individual examinations. The tubes used for cultures and the Wassermann test should not be opened or used for any other examination.

The various examinations may be divided into the following groups:

1. Macroscopical
2. Microscopical
3. Chemical
4. Wassermann
5. Culture

1. Often one can obtain much valuable information from a macroscopic examination of spinal fluid. As in all other examinations the fluid should be fresh. A fluid may be (a) clear; (b)

slightly turbid; (c) very turbid; (d) colored.

(a) The normal spinal fluid is always clear. In syphilis, poliomyelitis, encephalitis and tuberculosis except in very severe tubercular meningitis the fluid is always clear.

(b) Slightly turbid fluids are found in all forms of purulent meningitis in the early stage of the disease. Occasionally in very severe tubercular meningitis the fluid is slightly turbid. A fluid from tubercular meningitis will always show a very delicate fibrin clot on standing. In order to observe this clot the fluid should be set aside for a few hours and should not be shaken.

(c) In all forms of purulent meningitis such as meningococcic, pneumococcic, streptococcic, the fluid is very turbid and may appear as pure pus.

(d) A fluid may be colored from the ingestion of certain drugs such as methylene blue. The commonest forms of colored fluid are those met with in cases of hemorrhage into the brain or meninges. Examinations of a bloody fluid taken at various times after a hemorrhage show a range of colors varying from a true red blood color through reddish brown, reddish yellow, yellow of different intensities, to a clear, colorless fluid. The age of the hemorrhage determining the color of the fluid. A yellow fluid is found in tumors of the cord, especially the cauda equinae, and syphilis of that region. A greenish-yellow fluid is found in jaundice.

2. Microscopical examination. The microscopical examination of spinal fluid may be divided into two parts:

(a) Staining for pus cells and bacteria.

(b) Counting the number of cells present.

(a) Whenever pus is present the fluid should be centrifuged and a smear made of the sediment. The smear may be stained simply with methylene blue or a gram stain should be made which is of importance in differentiating the various types of bacteria before a culture is made. When tuberculosis is suspected a stain should be made for tu-

bercle bacilli and a very careful search of the stained smear should be made. Tubercle bacilli are never present in large numbers and a smear should not be pronounced negative until a prolonged search has been made.

(b) The cell or leucocyte count on the spinal fluid is one of the most important examinations to be made. Normally there are present a few cells in the spinal fluid. The number varies but is not greater than six or eight cells per c. mm. These cells are lymphocytes. In making the count an ordinary leucocyte pipette is used. Fifty per cent acetic acid is drawn up to the 0.5 mark and then well mixed spinal fluid to the 11 mark. The fluid and acid are then well mixed and a drop put on the ruled surface of an ordinary counting chamber. The cells in nine square millimeters are then counted. Their number multiplied by ten and divided by eight gives the number of cells per cu. mm. of spinal fluid.

The cell count is increased in all forms of purulent meningitis, the cells present being polymorphonuclears. In tubercular meningitis the cell count is always high and the polys and lymphocytes are about evenly divided. In poliomyelitis the cells are increased but their number is not as great as in tuberculosis. The polys and lymphocytes are about evenly divided. In syphilis there is an increase in cells and as a rule only lymphocytes are present. In lethargic encephalitis the count varies but is usually increased, the increase being due to lymphocytes. A differential cell count can be made most conveniently while the cells are in the counting chamber, without the addition of a stain.

3. Chemical examination. The two most important chemical examinations are for (a) globulin, and (b) sugar.

(a) Globulin is a protein found normally in the spinal fluid in very small quantities. Globulin is increased in certain disease conditions and is usually accompanied by a rise in cell count. The simplest test for globulin is that of Ross-Jones. This is a ring test and consists in overlaying about one c. c.

of saturated solution of ammonium sulphate with an equal quantity of spinal fluid. A cloud at the junction of the fluids denotes an increase in globulin.

(b) Sugar, in the form of glucose, is present normally in the spinal fluid in small quantities. It is tested for as in the urine using Fehling's or Benedict's solution. About twice the quantity of spinal fluid is used as compared with the amount of urine for a test. Sugar is used in diabetes and in encephalitis. Sugar is increased in amount or is absent in tubercular meningitis and the various forms of purulent meningitis. In poliomyelitis sugar is present in normal quantity.

4. The Wasserman Test. More fluid is required in doing the Wassermann test on spinal fluid than on blood. One c. c. is the amount usually required. The test should always be done on the fresh fluid as spinal fluid quickly becomes anticomplementary on standing. To avoid the fluid's becoming unsuitable for examination it is best to do the test on the day on which the fluid is withdrawn.

5. Cultures should be made on fresh fluid. A culture may be made either directly, by letting a few drops of fluid flow into a tube of culture medium at the time of puncture or indirectly, by pipeting a small quantity of fluid from one of the sterile tubes into the required culture medium.

Mention should be made of the Lange colloidal gold test and the mastic test which has been recommended as a substitute for the Lange test. These tests are of value in the early diagnosis of paresis and the differential diagnosis of several diseases of the nervous system.

SURGERY

A. E. BAKER, SR., M.D., *Editor*
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Operating on the Diabetic

Not many years ago operations on diabetic patients were approached with considerable anxiety. Relatively short surgical procedures were often followed by rapid production of ketone bodies resulting in coma and death. At present

with insulin and medical supervision, the operative risk in diabetic patients does not appear to be greater than in non-diabetic. In a recent article, Allen states that "thorough dietary preparation is advisable when possible and makes operation on diabetic patients practically as safe as on the non-diabetic. America has reversed the old European rule that surgery on patients with diabetes should be avoided as far as possible." Wilder and Adams state that the operation mortality in diabetes at the Mayo Clinic had been about 7 per cent, but that during the past two years 327 operations were performed on 251 diabetic patients with only 1.2 per cent of deaths. The authors believe that the reduction in mortality is due to the assistance of the internist who has become a part of the surgical team. Foster reports a death rate of 12 per cent at the New York Hospital during the first year following the introduction of insulin as compared with 40 per cent mortality for the decade preceding.

Rabinowitch found that in gangrene or infection there was a delay or absence of the rapid fall in blood sugar which usually follows the injection of insulin in uncomplicated diabetic patients.

The dose and frequency of insulin administration varies with the diet, degree of acidosis and hyperglycemia. The time of insulin administration has usually been one-half hour before meals; the larger doses being given before breakfast and supper.

Diabetic patients appear to be more susceptible to pyogenic infections and their tissues seem to be less resistant to the spread of infection once it is established. Extensive infection and suppuration may be unaccompanied by corresponding local or general signs or symptoms. Carbuncles may become dangerous on account of accompanying acidosis or because of spread of infection to adjacent tissues or to the blood stream. In mild diabetic patients bacteremia may occur without hyperglycemia or acidosis. It is usually a fatal complication which is accompanied by

multiple abscesses, some of which are characteristically located in the lungs. It remains to be seen whether the chemotherapeutic measures recently advocated will sterilize the blood of these patients.

The increased severity of the diabetes which practically always results from an infection, may manifest itself by elevation of the blood sugar, with or without acidosis.

The effect of treatment is best observed by examining each voiding of urine for sugar, diacetic acid, and reaction. Hypoglycemia may have serious effect on a patient already weakened by disease and operation. An amount of insulin which is necessary at one time may become excessive at another when absorption from an infected area is suddenly diminished. Hypoglycemia may also result if food is withheld for too long a time after the administration of insulin on account of anorexia, nausea, vomiting, or through error. The so-called insulin or hypoglycemia shock is easily relieved by the administration of sugar by mouth or hypodermically. The daily fluid intake is held between 2 and 4 liters by administering orange juice, water, bouillon, tea, and coffee by mouth. If necessary 0.9 per cent saline solution may be given under the skin, by rectum, or intravenously, in addition to the glucose solution. Often anything but water by mouth may be undesirable for several days after operation.

Acidosis usually subsides within 24 to 48 hours. The further dietary measures and insulin treatment are similar to those employed in uncomplicated diabetes.

Since the advent of insulin it is not uncommon to find more sugar in the blood and urine before breakfast than at any other period during the 24 hours. This is obviously due to the relatively long interval between the evening and morning doses of the hormone. It can be corrected by increasing the evening dose, by giving it later or by giving a second dose at about 10 p. m.

Gangrene is most frequently observed in mild diabetics and may occur with

only a moderate elevation of blood sugar (for example between 0.15 and 0.2 per cent) and without glycosuria or symptoms suggesting diabetes. This is one reason for urging periodic medical examinations especially of the urine and blood. Occasionally one finds the blood sugar elevated to 3 or 4 times the normal amount, with no sugar in the urine. Seelig reports such a patient who developed diabetic coma after colostomy under local anesthesia. This author also advocates the use of glucose and insulin as a prophylactic measure before operation.

Usually death and marked discoloration of the tissues have occurred when the patient seeks hospital care. Mortification may be slow, the gangrenous area circumscribed, dry, even mummified, or it may be rapid with extensive infection as evidenced by fever, swelling, redness, tenderness, inflamed lymphatics extending up the leg, and painful enlarged inguinal nodes, associated with hyperglycemia, glycosuria, and acidosis. In such cases early amputation is usually required.

In cases of acute appendicitis, intestinal obstruction, perforated duodenal ulcer, acute mastoiditis, etc., when there is little time for reduction of acidosis and blood sugar, the administration of glucose and insulin hypodermically before, during, or shortly after operation should become a routine procedure in the majority of instances.

If operations can be deferred as in simple hernia, hemorrhoids, chronic appendicitis, etc., then it is usually possible to clear the urine of glucose and diacetic acid several days before operation. If the operative procedure requires prolonged ether anesthesia, then glucose and insulin may be administered during the operation and during the immediate postoperative period.

In non-diabetic surgical patients, there appears to be no valid objection to the injection of any reasonable quantity of insulin, provided it is accompanied by the required amount of glucose. It has been given subcutaneously without untoward results in the proportion of

one unit of insulin for each gram of glucose for the acidosis of starvation whatever the cause, and to insure the rapid oxidation of glucose in kidney insufficiency, and in post-operation prostration or shock.

Ether anesthesia is apt to be followed by vomiting. it lowers the bicarbonate content of the blood, and raises the sugar in normal individuals and should therefore be used as sparingly as possible in diabetes. Local anesthesia with novocain is preferable. When more relaxation is required, nitrous oxide is preferable to ether, because it has less effect on blood sugar and bicarbonate and is less apt to produce vomiting. The recently proposed ethylene seems to have little effect on blood sugar and alkali in non-diabetic individuals. The effect is more pronounced in diabetic subjects.

Abst. of Dr. Bauman's Paper—"Diabetes in Surgical Patients with Reference to Insulin."

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*

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Heliotherapy With Special Reference to Spinal Tuberculosis.

The use of sunlight in the treatment of chronic diseases is as old as the study of medicine. The specific action of heliotherapy on deep seated tuberculous lesions was first emphasized by the Lyons school of surgeons in France. Their treatment consisted for the most part in exposure of the diseased area alone, although a few of the teachers recommended general, as well as local, heliotherapy. In 1903, Rollier opened, in Leysin, Switzerland, the first clinic for the systematic application of the sun bath to the entire surface of the body in the treatment of extrapulmonary tuberculosis.

The use of the sun bath as a therapeutic agent in the treatment of extrapulmonary tuberculosis is based on the recognition of the fact that tuberculosis, wherever situated, is a general disease presenting local manifestations, and as

such demands treatment directed toward the improvement of the general health.

Prolonged rest in bed, fresh air, sunshine, good food and the best possible hygienic surroundings are the recognized mainstays in the treatment of pulmonary tuberculosis.

Advocates of heliotherapy feel that these reconstructive methods are of equal importance in the care of extrapulmonary tuberculosis. If, in addition to these measures, the entire body is gradually and systematically exposed to the sun and air, preferably at a high altitude, the stimulating, upbuilding effect of this combination is of the greatest therapeutic value.

The action of the sun's rays can receive only a part of the credit for the results obtained in these cases. Rest, fresh air, food, and the maintenance of immobilization and correction of deformity when present, by appropriate means, must be taken into consideration as well. Just what the relative values of these different factors amount to is difficult to determine.

Prolonged rest in bed, not for a few weeks but for months, or even years is an essential feature of this treatment. Patients, unfortunately, have not been taught that this long period of physical inactivity is necessary, but have rather been encouraged to seek a short cut to a cure by resorting to more radical measures.

The action of sunlight on metabolism has not been definitely explained. Rollier says, "We know that a large number of vital reactions are accelerated and suppose this increased rate to be in some way connected with the absorption of radiant energy by the blood."

The direct action of light on a deep seated tuberculous lesion has neither been proved nor disproved; it would therefore be a mistake if, in the present state of our knowledge, it were to be denied categorically. The indirect action is well founded on fact. Light absorbed by the skin gives rise to numerous and useful reflexes; absorbed by the blood, the energy given out by the radiations is stored and carried by the

blood stream to every part of the body; when liberated, it stimulates the intracellular processes of oxidation and reduction. This condition is the probable explanation of the increased metabolism of the body, of the improvement of the general health, of the increased resistance to disease both present and threatened.

Dark persons react more favorably toward sunlight than do the fair. The sun bath must be applied gradually, and the time of exposure increased slowly. It must be regulated according to the subjective and objective reactions of the individual. The first day, the feet and ankles are exposed for five minutes, three times, interrupted by two ten minute intervals. The second the feet and ankles are exposed for ten minutes and the legs to the knees are exposed for the last five minutes of this period. This procedure is repeated three times at ten minute intervals.

The third day, the feet and ankles are exposed for fifteen minutes, the legs for ten minutes and the thighs for five minutes, three times with two ten minute periods of rest.

Next the abdomen and then the thorax are similarly exposed. Thereafter using increments of five minutes, this plan is followed until about the fifteenth day, after which the entire body is isolated from the beginning of the bath.

The maximal duration of exposure varies from three to six hours. This is not a hard and fast schedule, but must be varied according to idiosyncrasies and reactions.

A patient suffering from spinal Pott's disease is immobilized at once in the dorsal position, on a hard mattress, over a bed frame which does not sag. After the preliminary fresh air treatment has been given, the sun baths are begun and carried out according to the plan previously described.

When sun treatment is conscientiously and intelligently carried out under suitable climatic conditions, the prognosis in these cases is most favorable. One hundred and ninety-eight cases of spinal Pott's disease were treated in Leyden, from 1903 to 1913. Eighty-

six per cent. were cured and 12 per cent. were improved. There were two relapses and four deaths. It must be remembered, of course, that these cases were cared for by an experienced heliotherapist, working under almost ideal conditions.

The principal conditions in which heliotherapy has been shown to be of special value are:

1. Tuberculosis of the bones, joints, glands, skin and serous cavities and with certain modifications, of the lungs.
2. The acute febrile diseases during the stage of convalescence.
3. Rickets.
4. The secondary anemias.
5. Wounds, especially of the sluggish type, and those complicated by chronically discharging sinuses.
6. Fractures, particularly those showing a tendency to nonunion.
7. Osteomyelitis, as an essential part of the postoperative treatment.
8. General debility. This term is used to include that group of persons who are generally below par, but in whom evidences of definite diseases are wanting.

9. So-called pretuberculous children.

Heliotherapy is not to be employed in the presence of:

1. Nephritis.
2. High fever with toxemia.
3. Advanced circulatory disease, such as myocarditis, arteriosclerosis and decompensated cardiac disease.
4. Renal tuberculosis when bilateral and showing symptoms of impending uremia.

Heliotherapy should be stopped whenever acute intercurrent infection develops, and should not be resumed until the lapse of several days after the normal temperature has returned.

Mention must be made of artificial sources of actinic rays, as represented by the mercury vapor and carbon arc lamps.

It is probably true that some of these devices yield larger proportions of ultraviolet radiations than are to be found in natural sun light.

Proof is wanting, however, to show

that the therapeutic value of sunlight depends entirely on these limited rays. On the contrary the results of exposure to natural sunlight seem to be definitely superior, at least in the conditions here discussed, to those yielding by the ultraviolet rays alone.

This fact suggests, if it does not prove, that other parts of the solar spectrum have therapeutic actions which we can ill afford to do without.

Sevier, Chas. E., Jour. A. M. A., 1925, 85-793.

Eye, Ear, Nose and Throat

HENRY L. SLOAN, M.D., *Editor*
Charlotte

Do Glasses Weaken or Strengthen Eyes?

Hardly a day passes without someone saying to the writer that he does not wish to wear glasses, because they always weaken the eyes. Is this true?

What are the facts? The normal or emmetropic eye is of such a length and fitted by nature with such a focusing apparatus, so to speak, that rays of light emanating from an object twenty feet or beyond are focused on the perceptive retina (or recording film) of the eye clearly and without effort. In other words, if we think of the eye as a camera, such objects would make a clear image on the exposed film, and could be developed into clear pictures. The normal eye experiences no effort in vision at twenty feet and beyond. A certain amount of effort is required to see things clearly at reading distance, say thirty-three and one-third cm. or thirteen inches. This is made possible by the action of the ciliary muscle, the muscle of accommodation.

By use of perfectly fitted glasses the eyes are made as near as possible to conform to this scheme of the normal eye. It does not always follow that with the proper glasses distant vision is as good as that which is obtained in the normal eye. The eye may be so far from the normal that the visual acuity is permanently obtunded. In such a case normal vision at a distance may be impossible under any circumstances. However, the attempt is made in every

case to help the ametropic eye to function in a normal way; that is, to make possible clear vision at a distance without effort and to use the eyes without discomfort and headache in near work.

This near vision under such circumstances is gotten only by the expenditure of the same effort as the eyes that are normal. Certainly this does not mean the weakening of the eyes. On the contrary, it means that one is aided to use his eyes comfortably and at the same time develop their function and the sight under normal conditions.

But, you may say, that whereas you could see formerly without glasses, now you are very much dependent on them. Isn't it a fact that your eyes were troubling you in the first place or you would not have asked for help? The sum of the whole matter is that, whereas you could see dimly and with pain and discomfort, now with the glasses your eyes function normally without such annoying symptoms, and when you have once found relief and learned to know what it means, you feel that old conditions are unbearable. The person who wears proper glasses has to expend the same amount of energy to see, and no more, as the person with normal eyes. The glasses remove the strain, and this strain will finally lead to permanent crippling results.

DENTISTRY

W. M. ROBEX, D.D.S., *Editor*
Charlotte

Preliminary Report of Prenatal Clinic

Recent developments in preventive dentistry have pointed along lines related to the general health of the individual. At the prenatal clinic of Yale University School of Medicine, we have attempted to observe what effect thorough oral hygiene might have on those disorders of the general health peculiar to the period of gestation.

About 50 per cent of all pregnant women suffer from nausea and vomiting especially during the first few months of gestation. This may be moderate in degree, represented by the so-called

"morning sickness." On the other hand, it may necessitate isolation and hospital care. In several forms, called pernicious vomiting, the pregnancy may require termination prematurely to save the life of the mother.

Intensive study of the occasional severe form of pernicious vomiting has led obstetricians to believe the condition due to a toxemia, which is manifested in its final form by liver and kidney damage. No chemical or laboratory test is yet available to differentiate the moderate, curable case from the severest type, in its earliest manifestations. Certainly, minor, apparently extraneous causes may aggravate vomiting. Notably, gastro-intestinal disorders, uterine malpositions and lesions may cause, and their removal cure, severe vomiting. It is unwise, therefore, to place too great emphasis on any one causative factor; nor can one etiology be claimed for all cases of vomiting. However, it has been apparent that since we have routinely applied prophylactic dental hygiene to expectant mothers, especially early in pregnancy, the incidence of vomiting in all degrees has lessened.

"For every child a tooth" is an old saying, and recent studies of calcium metabolism make it apparent that there is a great change in the calcium storage of the mother during gestation and an increased output of calcium during lactation. This variation in calcium is represented in the mother's teeth and alveolar ridges.

It has been customary in the past for the better class of patients to submit to routine examination of their teeth as soon as pregnancy is suspected. Various physicians have permitted a more or less severe treatment of carious teeth, but we feel that the elimination of possible foci of infection, with attendant toxemia, has not been enforced on such patients.

We have studied a series of cases in our outpatient clinic (600) and likewise a smaller group of private patients during the past year. It has been remarked that there has been no case of

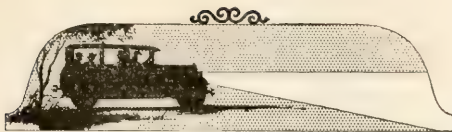
vomiting except of the very mildest degree arise on our service, with one exception. In that case, the patient developed a gall-bladder infection, which was responsible for the nausea. Knowing full well that it is easy to confuse "subsequence for consequence," we are not making any didactic inference in regard to the etiologic relation between a diseased mouth and pernicious vomiting. It is only too certain that factors that aggravate vomiting have been accused of causing the symptoms.

Without making, therefore, any arbitrary statement, we feel called on to report a small series of cases in which distinct relief of an aggravating symptom has been accomplished by placing the mouth in a sanitary condition.

—From a paper read by Drs. A. N. Creadick and Jewell M. Gompertz before the American Academy of Periodontology, Cleveland, September, 1923.

The Prevalence of Typhoid Carriers in a General Population

The survey reported on by S. W. Welch, Sophie A. Dehler and Leon C. Havens, Montgomery, Ala. (*Journal A. M. A.*, Oct. 3, 1925), included 1,076 healthy persons employed in the dairy industry of Alabama. There were 1,004 men and seventy-two women. Both feces and urine were obtained from each person an average number of 2.3 times. Thirty-nine healthy typhoid carriers, thirteen paratyphoid A carriers and three paratyphoid B carriers were found, making a total for both typhoid and paratyphoid of fifty-five, or 5.1 per cent. Three hundred persons in a community where, until a few years ago, a very high typhoid rate existed, yielded thirty-one carriers. If these are excluded from the general survey, there still remain twenty-four carriers of typhoid and paratyphoid among 776 persons, or a rate of 3.1 per cent. This study presents certain differences from those heretofore made. Not only were specimens of urine as well as feces obtained, but repeated examinations were made. An analysis of the positive results shows that thirty-four carriers were found on the first examination. Subsequent examinations resulted in the detection of twenty-one additional carriers who would have been missed had only a single specimen been obtained. Furthermore, there were eighteen urinary typhoid and five urinary paratyphoid A carriers. If feces only had been examined these would have been missed, leaving only eleven carriers, who would have been detected by a single examination of the feces, or a rate of 1.0 per cent.



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NEWS ITEMS

Dr. Henry R. Carter, assistant surgeon-general of the United States, died at his home in Washington September 14, after a long illness. Born in Caroline County, Va., in 1852, Dr. Carter was considered one of the foremost medical and sanitary specialists in the country.

He founded the present maritime quarantine system, and was nominated for the Nobel prize in connection with his discoveries in yellow fever work.

Dr. Carter was commissioned in the United States marine hospital service, now the public health service, May 5, 1879. He served as chief quarantine officer of Cuba from January, 1899, until August, 1900, and as chief quarantine officer of the Isthmian Canal Commission from May, 1904, until February, 1905, when he became director of hospitals of the Isthmian Canal Commission, serving in this capacity from March, 1905, until September, 1909. He served at different times as sanitary supervisor to the Peruvian government, and as a member of the yellow fever council of the international health board of the Rockefeller Foundation up until the time of his death.

He inaugurated control measures for malaria in the extra cantonment areas of army camps in malaria regions during the World War, and was a member of many scientific bodies relating to medicine and hygiene, both American and foreign including the Authors' Club of Great Britain. He formulated the doctrine of control of the yellow fever-bearing mosquito as the sole method necessary for the elimination of endemic centers of this disease.

For many months, prior to his death, Dr. Carter had worked on a history of yellow fever, a work that took him into many fields of literature and history, in many languages, and even in many dialects. His one hope was to live until this was completed. Three days before he was stricken with what proved to be his last illness, he had so far completed it that it can be finished by others, and

this task will be undertaken by his daughter, Miss Laura Carter.

Dr. Alonzo Myers, of Charlotte, held a clinic in orthopedics in Fayetteville on September 26 at which thirty children were examined, four of whom were found to be in need of hospital treatment. The Kiwanis Club of Fayetteville provided the funds and the clinic was held under the auspices of the North Carolina Rehabilitation Bureau co-operating with the State Board of Health.

Dr. Julian M. Baker, of Tarboro, was the speaker at the morning exercises representing the University Class of 1879 at the semi-centennial celebration at Chapel Hill on October 12. Dr. Baker was one of the 69 students to enter the University in 1875, the year of the reopening of the institution after the War Between the States.

The War Department has recognized the death of the first officer who was killed in our Army by naming the largest Army General Hospital—The Fitzsimons General Hospital, U. S. Army, Denver, Colorado—after First Lieut. Wm. T. Fitzsimons, Medical Reserve Corps, U. S. Army, Adjutant of U. S. Army Base Hospital No. 5.

Dr. Oscar L. Miller, Superintendent of the State Orthopedic Hospital, held a clinic for crippled children at Kinston October 1. The clinic was arranged for by the State Board of Charities and Public Welfare and was attended by a representative of the Children's Bureau of the United States Department of Labor.

Plans for the annual convention of the North Carolina Hospital Association at Wrightsville Beach May 10 and 12, 1926, were formulated at the final session of the executive committee of the association at the Chamber of Commerce Friday afternoon.

Dr. C. S. Gilmer, president of the Am-

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erican Hospital Association, is one of the notable men who will be invited to attend the Wilmington meeting. He is superintendent of the Wesley Memorial Hospital at Chicago. It was agreed also at the meeting to invite members of the Virginia and South Carolina Hospital Associations to attend the convention.

A committee was appointed to carry out the recommendations of a paper read at the last convention suggesting education for motherhood and hospitalizing complicated obstetrical cases. The committee is composed of Dr. D. A. Garrison, of Gastonia; Dr. Greene, of Wilmington; Dr. Charles A. Woodward, of Wilson; Dr. Oren Moore, of Charlotte; and Dr. Ivan Procter, of Raleigh.

Practical Points About Tetanus

Dr. Louis I. Harris, Director of the Bureau of Preventable Diseases, Department of Health of New York City, gives the following timely advice on the prevention of tetanus:

Tetanus bacilli abound especially in the Atlantic States, parts of Long Island, New Jersey and the Hudson Valley. It is well to bear in mind, however, that in any locality, wounds which may be contaminated by soil or by other foreign substances may harbor the tetanus bacillus or spore. Especially dangerous are punctures or lacerations which are not freely exposed, and which may therefore prove particularly favorable to the growth of the tetanus organism. No matter how trivial a wound may appear, it should be freely opened so as to make possible the removal of all foreign matter and to thoroughly cleanse it. Prompt treatment is most important. All tissue that has been devitalized should be removed and the wound kept freely open and drained. These injunctions are of special force in gunshot, cartridge and fireworks wounds.

Preventive Infections: The injection of 1,500 units of tetanus antitoxin is a most reliable preventive of lockjaw. The recent war proved this amply. Injections, to be effective, should be given as soon after a suspicious form of injury as possible. The injection should be given in every case of injury due to firearms or fireworks.

When the patient has previously received antitoxin or other protein injections, or gives a history of bronchial asthma or some form of sensitization, it is well to give a tentative subcutaneous injection of one or two drops to discover any abnormal sensitiveness and as a guide to determine in what manner to administer the total prophylactic dose.



MEDICINE AND SURGERY in its every phase will be covered in the programs of the general sessions, nineteen sections and conjoint meetings and clinics making up the annual activity this year—scientific medicine in all its branches brought right down to NOW.

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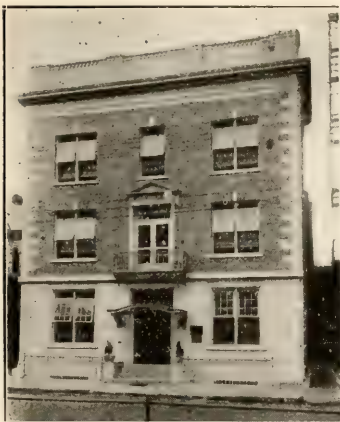
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REVIEW OF RECENT BOOKS

A PRACTICAL MEDICAL DICTIONARY of Words Used in Medicine with their Derivation and Pronunciation, Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance and Other Special Terms; Anatomical Tables of the Titles in General Use, and Those Sanctioned by the Basle Anatomical Convention; Pharmaceutical Preparations, Official in the U. S. and British Pharmacopoeias and Contained in the National Formulary, and Comprehensive Lists of Synonyms. By Thomas Lathrop Stedman, A.M., M.D. Editor of the "Twentieth Century Practice of Medicine" and of the "Reference Handbook of the Medical Sciences" formerly Editor of the "Medical Record." Eighth, Revised Edition. Illustrated. New York. William Wood and Company.

The reviewer first became acquainted with this book ten years ago when it was in its third edition. It was through reading the prefaces that his interest was elicited and stimulated to the point of covetousness.

"If it were possible, a moulding of the language of medicine on pure Greek or Latin forms were most desirable, but the speech of man is wilful and cannot be coerced; at most an attempt can be made to guide it, or to point out what is preferable."

The preceding paragraph is a real foretaste of the text. Words which have no legitimate parentage are admitted, but they are not welcomed; and it is made plain that they are tolerated only on sufferance.

"In the case of the Greek sources it has been thought best, after mature deliberation, to give them in Roman letters rather than Greek"; but it is explained that this is done under protest.

Preference is given to simpler forms, diphthongs being dispensed with. The pronunciation key is the one in use when most of us obtained our first instruction in this line and so is understandable without translation.

The newest edition includes the new words which the last few years have brought into being and eliminates some of the tables which are little used.

Dictionaries are made daily use of by only a few. These few have set the stamp of their approval on this work in previous editions and the new one well merits their continued favor. It is to be hoped, too, that the simplifications will help to bring about an extension of the use of the dictionary habit.

ALLERGY Asthma, Hay Fever, Urticaria and Allied Manifestations of Reaction by William W. Duke, Ph.B., M.D., Kansas City, Missouri. With Seventy-five Illustrations. St. Louis. The C. V. Mosby Company, 1925. \$5.50.

An endeavor is made to present the subject in a simple, brief and clear manner. The opinion is expressed that "a relatively large num-

ber of the cases of sudden inexplicable deaths of apparently healthy individuals" are due to sensitization to some ordinary foodstuffs. This danger in certain individuals applies to stings of insects as well.

An attempt is made to clear up the confusion growing out of the reckless use of the terms "allergy" and "anaphylaxis." The fascinating history of the origin and growth of our knowledge of these conditions is traced. Specificity is a striking characteristic of sensitiveness to foreign protein. This has an important bearing on treatment.

It is said that a report was made by Botallus in 1565 of a case in which "roses caused headache, sneezing and itching of the nose," and Blackley in 1856 performed skin tests by applying dried pollen to a scarified area.

Sensitiveness to hair and feathers is important, but rare as compared with pollen sensitiveness. Food is an important source of allergy but does not rank with pollen. Food sensitiveness is usually multiple. Drug idiosyncrasies are often really due to impurities in the drug or its solvent. The usual precautions against anaphylactic manifestations following the administration of sera are described.

"Nasal defects have more than an ordinary bearing in the pathogenesis of reaction . . . among one hundred pollen cases examined, a deviated nasal septum was found in 32 per cent of cases." Off-hand, one would say that is no larger than the percentage in the whole population.

Symptoms in all their variations and under various groups of organs are elaborately discussed. Implicit reliance on skin tests for diagnosis is discouraged. Scarcely 25 per cent can be so diagnosed.

Treatment is outlined under five heads, namely; avoidance or removal of the specific cause of illness, avoidance or removal of contributory causes, specific protein treatment, non-specific protein treatment, and symptomatic treatment.

Regarding treatment: "It appears, on the whole, that patients with pollen disease are either easy to relieve or difficult to relieve!" and "The duration of immunity gained through pollen therapy varies," and cannot be relied on for more than six to eight weeks.

The book is written on a basis of a broad experience and from the viewpoint of the internist rather than the specialist who confines himself to these few subjects.

AN INTERMEDIATE TEXTBOOK OF PHYSIOLOGICAL CHEMISTRY with Experiments by C. J. V. Pettibone, Ph.D., Associate Professor of Physiological Chemistry, Medical School, University of Minnesota, Minneapolis. Third Edition. St. Louis. The C. V. Mosby Company, 1925. \$3.25.

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chemistry which is not so elementary as to fail of instructing, and, at the same time, not so advanced as to be incomprehensible. In the past few years this branch of science has advanced so rapidly that few can grasp the accounts of its present state except when they are simplified to our grade of instruction on the subject.

The chapters dealing with digestion and absorption are particularly valuable. It would seem that the physiological chemist is the best man to set forth these essentially physiologico-chemical processes.

The latest micro-chemical methods for blood analysis are described and the final chapter contains valuable instruction on special reagents.

DIABETES—ITS TREATMENT BY INSULIN AND DIET. A Handbook for the Patient by Orlando H. Petty, A.M., M.D., F.A.C.P. Professor of Diseases of Metabolism, Graduate School of Medicine, University of Pennsylvania and William H. Stoner, A.M., M.D., F.A.C.P. Associate Professor of Biochemistry, Graduate School of Medicine, University of Pennsylvania. With Illustrations and Tables. Philadelphia. F. A. Davis Company, Publishers, 1925. \$1.50.

This is an entirely authoritative treatise covering an important field. Without some such guide it is well-nigh impossible for a patient to properly carry out directions for his care; with it he will be much more disposed toward cheerful cooperation.

THE NORMAL DIET. A Simple Statement of the Fundamental Principles of Diet of the Mutual use of Physicians and Patients, by W. D. Sansum, M.S., M.D. Director of the Potter Metabolic Clinic, Department of Metabolism, Santa Barbara Cottage Hospital, Santa Barbara, Calif. Illustrated. St. Louis. The C. V. Mosby Company, 1925. \$1.50.

This little book discusses briefly the caloric, protein, mineral, water, vitamin and bulk requirements of the body, and acidosis.

OCULAR THERAPEUTICS. A Manual for the Student and the Practitioner, by Doctor Ernst Franke, A.O., Professor of Ophthalmology and Chief of the Second Eye Clinic at the University of Hamburg. Translated by Clarence Loeb, A.M., M.D., Oculist to the Michael Reese Hospital, and Head of the Department of Ophthalmology of the Michael Reese Dispensary, Chicago, Ill. St. Louis. The C. V. Mosby Co., 1925. \$3.50.

The author does not profess to give every remedy which has been described but has included some which "have unjustly been forgotten." Attention is called in the opening sentence to the necessity for remembering always the probability of the disease under observation being one involving the organism as a whole.

Many constitutional diseases which fre-

quently have direct bearing on eye diseases taken up and their relationship to the therapy of ocular disease stated. Chapter II is on general treatment. Tuberculosis, syphilis, serotherapy, organotherapy, paraspecific therapy, ray and light treatment, electric and medical treatment are considered at length.

Some of these agents are little known or used in this country.

Chapter III devoted to local treatment deals with mechanical, thermic, light and ray, drugs, serum and electrical treatment.

Chapter IV discusses therapy as applied to special parts.

Reading this book cannot fail to impress the ophthalmologist with the necessity of treating his patients generally as well as locally.

EYE, EAR, NOSE AND THROAT MANUAL FOR NURSES. By Roy H. Parkinson, M. D. Visiting Oculist and Aurist to St. Joseph's Hospital, San Francisco, California. Illustrated. St. Louis. The C. V. Mosby Company, 1925. \$2.25.

A prominent North Carolina specialist in this field expresses himself as most favorably impressed with this work, both for its substance and its arrangement. The quiz which concludes each chapter and the directions for arranging for operations he regards as especially valuable.

THE SURGICAL CLINICS OF NORTH AMERICA (Issued serially, one number every other month). Volume V, Number IV, (Chicago Number—August, 1925). 246 pages with 54 illustrations. Per clinic year (February, 1925, to December, 1925). Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London. W. B. Saunders Company.

Dr. Bevan conducts a clinic on one case each of splenic anemia and hemolytic jaundice. He remarks on the medical myth that the ancients removed the spleen for the purpose of enabling runners to cover great distances. In each case the spleen was removed with satisfactory results.

Drs. Ochsner and Schmidt report an extremely unusual case, one of gas bacillus infection following removal of a gangrenous appendix. Irrigation and dressing with chlorine solution were employed and the patient recovered.

Dr. Carl Beck describes a metastatic abscess of the brain following a suppurative osteomyelitis and a sarcoma of the skull with metastasis in the lung.

Dr. Pennington advocates the open method of dealing with one-rectal fistulae, and Drs. Moorehead and Dewey present a case of tuberculosis of the mouth.

Among other subjects are kinks of the neck of the gall-bladder, urethral stricture, gastric sarcoma and carcinoma, post-operative hernia, nerve injuries, fractures, shoulder dislocations, axillary aneurysms, and a simplified herniotomy.

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This volume deals with subjects of more than ordinarily general interest.

AN INTRODUCTION TO OBJECTIVE PSYCHOPATHOLOGY. Bio G. V. Hamilton, M. D. Director of Psychological Research, Bureau of Social Hygiene, Inc., New York City, N. Y. With Foreword by Robert M. Yerkes Ph.D., LL.D. Professor of Psychology, Yale University, St. Louis. The C. V. Mosby Company, 1925. \$5.00.

"If my book serves no other useful purpose than to focus attention upon the importance of method in psychopathologic research I shall be quite content." Evidently the author has recognized and attempted to supply a need.

The Foreword by Professor Yerkes is a strong endorsement of the work. Says he "I hail this little book with delight as the first chapter of a new and promising psychopathology. Is it too much to hope that it may help to arouse the profession to the inadequacy of medical education in all matters pertaining to human behavior?"

The two hundred nervous cases described in detail cover a wide range and some of them contain startling disclosures. They are offered for illustration of principles. The observations were made in a Mississippi valley town of 30,000 inhabitants, so can be taken as fairly representative of conditions existing generally over the country.

Chapter seven is devoted to "Comparative Studies of reactions to baffling disadvantages." In addition to humans, monkeys, baboons, dogs, cats, horses, mice, rats and gophers are made use of in these studies.

Habit-formation has a special chapter, which clearly states problems such as are daily encountered and offers rational means for their solution. The account of the monkey who after angering the dog and failing to bluff him, mauled his mate until it was necessary to remove her from the cage, is strong evidence for the close kinship between monkeys and men.

The book goes well into the explanation of the theories which are supposed to explain normal and abnormal reactions. Its study will serve to clarify much which is obscure and which is necessary for understanding nervous conditions.

A PRACTICAL TREATISE ON DISORDERS OF THE SEXUAL FUNCTION IN THE MALE AND FEMALE. By Max Huhner, M.D. Chief of Clinic, Genitourinary Department, Mount Sinai Hospital Dispensary, New York City; formerly Attending Genitourinary Surgeon, Bellevue Hospital, Out-patient Department and Assistant Gynecologist, Mount Sinai Hospital Dispensary, New York City; Member, American Urological Association, American Medical Association, New York Urological Association; Fellow of the New York Academy of Medicine, etc.; Author, *Sterility in the Male and Female*

and its Treatment, etc. Second Edition. Philadelphia. F. A. Davis Company, Publishers, 1925. \$3.00.

Interest in this subject is much greater among neurologists and alienists than among genito-urinary surgeons; but, as the author points out, the latter is qualified to investigate these disorders in ways not open to the former. It would seem that the best results are to be obtained only through collaboration of these specialists and the family physician.

This treatise is based on the experience of a genito-urinary surgeon working constantly and intimately with a neurological clinic.

The various disease conditions are dealt with frankly and plainly and treatment advised is along rational lines.

Effects of War Gases on the Lungs

Usually the study of pathology is looked on as an aid primarily to the diagnosis, treatment and prognosis of disease. The widespread institution of workmen's compensation acts, and more recently the problem of care and compensation for soldier victims of the World War, have made new and often unanticipated demands for accurate information about pathologic conditions. An illustration of this is afforded by the questions arising in relation to the sick veterans who have been gassed. The immediate clinical effects and the acute lesions are already known; but it is not yet clear whether chronic disorders persist after the symptoms have subsided. Koontz of the Edgewood Arsenal Medical Research Division has completed a study of the delayed effects to approximately lethal concentrations of phosgen, mustard gas, lewisite, chlorine, chloropicrin and methylchlorarsin in dogs, a species having lungs even more delicate than those of man. In the majority of the animals, pathologic lesions could not be demonstrated from two months to a year after recovery from the gassing. In a minority of instances, permanent lung damage was discovered; but it was not widespread, being confined generally to small areas, and usually in the form of small patches of organization, thickening of the bronchial walls with loss of elasticity, or occasional closing of the bronchioles by organized exudate. Such damage ultimately results in a small amount of fibrous scar tissue that can scarcely affect the functional efficiency of the lungs. Therefore Koontz believes it reasonable to conclude that in the vast majority of surviving human patients, who were not gassed so severely and who receive better hospital care all lesions disappear within a short time after the gassing. The small amount of fibrosis remaining in the minority of cases can hardly be a cause of serious disability.—*Jour. A. M. A.*, Sept. 19, 1925.

2. Koontz, A. R.: When Do Lungs Return to Normal Following Exposure to War Gases? *Arch. Med.* 36:204 (Aug.) 1925.5

Westbrook Sanatorium

RICHMOND

VIRGINIA



A private institution of 135 beds, located in the Ginter Park suburb, near two trolley lines, within ten minutes ride of the heart of the city, and on the Richmond-Washington National Automobile Highway. Midway between the North and the South, the climate of this portion of Virginia is almost ideal. Many places of historic interest are within easy walking distance.

ILLUSTRATED BOOKLET ON REQUEST

The plant consists of twelve separate buildings, located in a beautifully shaded fifty-acre lawn, in the midst of a hundred and twenty-acre tract of land. Remoteness from any neighbors assures absolute quietness.

The large number of detached buildings makes easy the satisfactory and congenial grouping of patients. Separate buildings are provided for men and for women. Rooms may be had single or en suite, with or without private bath. A few cottages are designed for individual patients.

The buildings are lighted by electricity, heated by water, and are well supplied with baths. The water supply for the entire institution is derived from an artesian well on the grounds, of approved therapeutic value.

The scope of the work of the sanatorium is limited to the diagnosis and the treatment of nervous and mental disorders, alcoholic and drug habituation.

Every helpful facility is provided for this, and the institution is well equipped to care for such patients. It affords an ideal place for rest and up-building under medical supervision.

Four physicians reside at the sanatorium and devote their entire attention to the patients.

A chartered training school for nurses provides especially equipped nurses—both men and women—for the care of the patients.

Systematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

Jas. K. Hall, M.D.

O. B. Darden, M.D., Associate

Paul V. Anderson, M.D.

J. H. Royster, M.D., Associate

MISCELLANY

The Rarity of Cancer Among the Members of Certain Primitive Races.

Primitive races are practically free from cancer, appendicitis, diabetes and other diseases suggestive of metabolic disturbances, finds Frederick L. Hoffman, LL.D., consulting statistician of the Prudential Insurance Company of America, who says that it is not easy to exaggerate "the positive evidence of the rarity of cancer occurrence among uncivilized or primitive races."

"Why, for illustration, should cancer of the breast be practically absent among the women of the Indians of North and South America?" he asks. "Why should this fatal and increasing affliction be ten times more common among the women of Great Britain than among the women of Japan?" Until the subject of the rare occurrence of cancer among primitive peoples is thoroughly investigated and understood, little progress towards an improvement in the cancer situation is likely to be made.

"In other words there is apparently the most urgent need of diverting some of the efforts and means expended upon laboratory research and inquiry towards the infrequency or non-occurrence of malignant tumors of all kinds among primitive races, and no field, in this respect, would seem to be of greater promise than a study made among the Indians in North and South America and among the black and mixed-blood population of Bermuda, Jamaica and the various other races of Central America and the West Indies. My own investigations among the Indians in North and South America are decidedly suggestive of the conclusion that the essential differences between these races and those who are civilized lies in the matter of diet and the resulting nutritional conditions, favorable or otherwise, as the case may be. If the increasing frequency of cancer is even in part attributable to the dietary habits common to civilized races, it is obviously a matter of first importance that this aspect

of the subject should receive more extended and dispassionate consideration."

National Board of Medical Examiners.

Dr. Horace D. Arnold of Boston, President of the National Board of Medical Examiners, announced recently, following a meeting of the Executive Committee, that two additional States, Connecticut and Utah, have notified the Board that henceforth they will accept its certificate qualifying physicians to practice medicine in those States. The Board has been active since 1915 in establishing a standard qualifying examination of such character that its certificate can be accepted by all State Boards licensing physicians. Its certificate is now recognized in more than 30 States, and also in Great Britain.

Dr. Arnold, who was formerly Dean of the Harvard Graduate School of Medicine, also announced the results of the Board's June medical examinations. A total of 508 were examined, the largest number ever to take the written examination of the National Board. The examinations were held at 30 medical schools throughout the country including Harvard in Boston, Cornell in New York, University of Chicago in Chicago, Tulane in New Orleans, University of Texas in Galveston, Washington University in St. Louis, University of Minnesota in Minneapolis, University of Oregon in Portland, University of California in San Francisco, and the College of Medical Evangelists in Los Angeles.

The Board also held examinations during June and July in Part III which is a practical and clinical test and the final examination of the candidate. These examinations were held in Chicago, Cleveland, Galveston, Minneapolis, New York, Philadelphia, Portland, and San Francisco. They were attended by 138 candidates, of whom 130 passed successfully and were granted the certificate of the Board.

Of the 334 candidates who took either the complete examination in Part I

TULANE UNIVERSITY OF LOUISIANA

GRADUATE SCHOOL OF MEDICINE

Reorganized to meet all requirements of the Council on Medical Education of the A. M. A. The Charity Hospital, Touro Infirmary and Senses Hospital afford the greatest abundance of clinical material. New teachers have been added to the Faculty and courses of instruction thoroughly systematized have been planned so as to assure the highest degree of efficiency.

For particulars address

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NEW ORLEANS, LA.

THE BAKER SANATORIUM

Colonial Lake

CHARLESTON, S. C.

Archibald E. Baker, M.D., F.A.C.S.

Surgeon in Charge

Archibald E. Baker, Jr., M.D.)
Barnwell R. Baker, M.D.) *Associates*



(which covers the first two years in medicine) in June, or completed Part I by taking subjects previously postponed, Ralph Lichenstein of Philadelphia, who obtained his medical education at the Jefferson Medical College, Philadelphia, earned the highest number of credits, securing 394 out of a possible 425. Euclid P. Ghee of Jersey City, who is a member of the class of 1927 of the Harvard University Medical College, stood second with 392.3 credits.

Eddyites Oppose Medical Examination of Motorists

"Organized Medicine Looking to Motorists for Revenue": thus the Monitor, the daily published by the followers of Mrs. Eddy. It

seems that the mouthpiece of this cult is opposed to the recommendation of the American Medical Association's Committee on Physical Standards for Drivers of Motor Vehicles. This committee urged that every person driving a motor car should be required to present evidence of good eyesight, such evidence to consist of a certificate from a reputable physician who has tested the vision of the individual. It is perhaps logical that a cult that declares that "the human mind and body are myths" should view with equanimity the appalling toll of life taken by automobiles in this country. Presumably Eddyism—officially at least—does not recognize the reality of errors of refraction, yet it is not among the least amusing things in this drab world to note the number of persons in any Eddyite church who wear glasses. —Jour. A. M. A., June 27, 1925.

The Duty of the Family Physician.

For many years there has been a well organized system in the United States to protect public health—that is the health and lives of citizens as a mass formation. Thereby have been accomplished definite results in some instances, notably the practical elimination of typhoid fever as a menace and the protection of school children through medical supervision and the application of preventive measures.

In the meantime, however, the individual has received scant attention and only during a more recent period have his particular requirements claimed the attention of the medical profession. While the need of regular periodic physical examinations is now recognized and advocated by all progressive physicians and has been officially urged by the American Medical Association through the House of Delegates, it does not require very close observation to note the indifference of our fellow practitioners to the call.

State and County societies have evidenced cooperation with the central organization by the adoption of resolutions, naming special committees to carry on the work and devoting space on their programs to its consideration but what, so far, has been the response of the vast majority of the members? Very few of them have heartily recommended it to their families or given the subject anything more than a passing consideration.

The opportunity is ripe to confine such an important matter to the ranks of family physicians and wrest it from exploitation by commercial institutes. But this will not be accomplished, unless we display more personal, active interest in getting the message to the people. We need to be cooperative, "to push" the splendid educational work of the Gorgas Memorial Institute, now under way in the newspapers of our country.

While the more urgent application of the necessity of this work may be of greater vital interest to men and women of mid-life, no age or class is exempt.

A careful scrutiny of a babe may dis-

close conditions or apparent tendencies of disease which, recognized in season, will result in a sound mind in a sound body instead of a crippled limb or arrested mental development.

The growing child will record defects of eyesight or hearing unrecognized by the parents and by properly applied remedies saved from a life of dependency, and so on through the several decades until its greatest worth is found after middle life. It is our duty to be the leaders in this movement, to enter upon it with well equipped and united ranks, to give proper publicity of its necessity to the people and devote full and sufficient time to every examination.

Too long has the mind of the medical man been focused on *disease* principally. Let him now devote special attention to the *presumably well*. The average person cannot be expected to recognize the indications of developing, harmful symptoms of disease. Let our profession resolve to contribute to human progress the best of its resources.

From an article by D. E. Sullivan, M.D., Secretary New Hampshire Medical Society, Member Gorgas Memorial Institute.

Mortality From Diarrhea and Enteritis in American Cities, 1900-1924.

There is perhaps no better evidence of a substantial advance in standards of American family life than the figures which show the effect of parental intelligence and of enhanced family well-being upon the death-rate of young children. Children are today being saved for lives of future usefulness who would have died under the conditions of family environment, and under the standards of child care prevailing twenty years ago. There is much evidence to show the extent of the real advance in this element of our civilization. Among children under one year of age in the United States Registration Area in 1900, nearly 17 per cent., or about one-sixth, died before reaching the second birthday. In 1922, the mortality among these babies was 8 per cent! Two decades ago, more than 2 per cent. (2.1), died each year at the ages between one and five. In recent years, this death-toll has declined to much less than 1 per cent. (.7) of this child population each year. Perhaps the best evidence of an advance in parental intelligence and in family welfare is the declining death-rate for diarrhea and enteritis. The diseases included under this heading in mortality statistics are, for the most part, due to the improper care and feeding of children.

Statistical Bulletin, Metropolitan Life Insurance Company.

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*Your assistance in keeping this list revised to date, as well as in supplying medical news notes is greatly desired.—Ed.

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No. 11

FOREWORD BY WILLIAM J. HUNNICUTT, M.D., ASHEVILLE,
COUNCILOR FOR THE TENTH DISTRICT MEDICAL SOCIETY

After a long period of inactivity, the Tenth District Medical Society was re-organized on November 12, 1919, at the Battery Park Hotel during a stated communication of the State Medical Society, under the leadership of our deceased friend and co-laborer, Dr. Eugene B. Glenn, Councilor of the District.

What success has been attained in the Tenth District is due largely to the untiring efforts, well matured plans and enthusiasm of Dr. Glenn. He was very anxious to see the medical profession of Western North Carolina come into its own. He knew very well, possibly better than anyone else, that scattered throughout this mountain area could be found among the profession diamonds in the rough who needed only an opportunity, a fraternal touch and friendly encouragement to make them shine and give luster to the medical profession. To this end he devoted his energy, always interesting himself in the selection of its officers, the places of meeting and the policies which were to govern the organization. Since it was distinctly a District Society, it was his desire that all should feel that it was their organization and therefore not confined to any particular locality. It was his idea to hold meetings at different points in the district, selecting officers from the various counties and he insisted on physicians in the isolated sections writing and discussing papers and reporting interesting cases coming under their observation.

The attendance has increased with each meeting until the number quite of-

ten reached more than a hundred. A very gratifying and pleasant feature of our meetings is the large attendance of the ladies. Our entertainment at each meeting has been royal, and the constant increase in attendance proves that this is a most important feature of our program. The meetings have been not only helpful and instructive from a medical standpoint, but they have served to build up a strong bond of friendship among our physicians, a relation which adds greatly to the pleasure of our association. Our scientific programs have been above the average, covering the various specialities of medicine and surgery, the papers being fully and interestingly discussed. It has been our pleasure to have with us at practically every meeting the president and secretary of the State Medical Society and other visitors of prominence both within and without the state.

This District has held its annual and semi-annual meetings in the towns within its borders from Murphy to Marion since its organization in 1919. At the meeting in April, 1921, Dr. Fred L. Siler, in his presidential address, recommended and urged the establishment of a branch of the State Pathological Laboratory in the district at Asheville, that being the central point. As a result of this recommendation the Laboratory has been established in Asheville and has served the people of the district well for the past four years.

At the annual meeting held in Canton in September, 1925, following the discussion of a paper read by Dr. Frank

Richardson, of Black Mountain and Brooklyn, N. Y., which is printed in full elsewhere in this issue, the President appointed a committee composed of Drs. John D. MacRae, Frank Richardson, A. T. Pritchard, J. R. McCracken, C. C. Orr and J. F. Abel, to act with the Councilor for the purpose of formulating and presenting a program of instruction in clinical medicine at its next meeting to be held at Sylva in the spring of 1926. It is planned to follow up this program with a permanent scheme of post graduate instruction in the district by and for its members. As Councilor, I am much gratified at this forward movement, and feel that if the committee can formulate and work out a practical scheme for carrying out this suggestion, the Tenth District will have reason to be proud of taking the initiative in

this important field.

Since the death of Dr. E. B. Glenn, under whose leadership the Tenth District Society has grown and developed to such proportions, the honor as well as the responsibility of carrying on the work he has so well begun has fallen on the shoulders of the writer. I know of no better memorial to him than to carry on as he began, with the hope that I may be instrumental in making the Tenth District Society the largest, most progressive and influential in the State.

In closing, we wish to express our thanks and appreciation to Dr. James M. Northington, Editor of Southern Medicine and Surgery, for his very kind offer to devote this issue of his valuable journal to the use of the Tenth District Medical Society.

THE PHARMACOLOGY OF VERATRUM VIRIDE WITH CERTAIN THERAPEUTIC SUGGESTIONS*

WILLIAM DeB. MACNIDER, M.D., Chapel Hill, President Medical Society of North Carolina

From the Laboratory of Pharmacology of the University of North Carolina

There are few drugs concerning which there is more honest difference of opinion than exists in connection with the Veratrum-Aconite Group. Most of the young, and perhaps the middle aged group of physicians, consider both of these drugs extremely dangerous circulatory depressants. They know very little concerning their pharmacology and have no conception of their therapeutic value. There is, on the other hand an older group of physicians who consider both aconite and veratrum safe drugs and very valuable therapeutic agents. As is usually the case with dogmatic statements, there is a middle ground of truth concerning the action and value of veratrum where these points of view can meet if the question is approached with fairness and an open mind.

The Pharmacology of Veratrum Viride

For many years before the discovery of the coal tar antipyretics, and for even a longer period before the use of cold to reduce body temperature was returned to, veratrum was largely employed as an antipyretic. By its use the clinicians induced sweating, the heart beat became much slower and the pulse became of large volume and was softer. In certain types of convulsive seizures, especially those of eclampsia when associated with high blood pressure this drug was extensively used to decrease the frequency and severity of the attacks if not to stop them. This latter action was so constantly observed by many of the older physicians that it became a regular plan of treatment to give veratrum in eclampsia, either by mouth or hypodermically until the pulse was reduced to sixty-five. Many of these physicians would even go so far, likely in

terms of the truth to state, that if the "pulse was kept at or below sixty-five beats per minute the patient could not have convulsions." Such clinical observations are of great importance, and if the modern medical man and laboratory worker fails to notice them he may miss some important medical facts. We must remember that vaccination for small pox was suggested to Edward Jenner through the observation of dairy maids, that if they had the cow pox they would not have the then fatal small pox.

Veratrum viride and veratrum album are varieties of hellebore which have as their main active principle an alkaloid, protoveratrin. Other bodies of an alkaloidal character are present in veratrum which may be responsible for some of its pharmacological effect. These substances are not all crystallizable and therefore preparations of veratrum can not be assayed chemically, and the potency of a given veratrum preparation determined and standardized. Preparations of veratrum have to be subjected to a bioassay in which physiological methods are employed. The fact that such methods, which insure preparations of veratrum of standard potency, are only of recent use, may explain the lack of effect and the variable effect which this drug had in former years. A similar statement can be made for the preparations of digitalis. Preparations of this drug varied greatly in potency, and results from its use were often disappointing until the leaves of the drug and the various preparations were bioassayed and standardized.

The two preparations of veratrum in common use are the standardized, official 10 per cent tincture, and the unofficial and much stronger Norwood's tincture. With few exceptions in the experimental work which has been done

*Read before the Tenth Councilor District Medical Society, Canton, Haywood County, North Carolina, September 23, 1925.

with veratrum, the standardized 10 per cent tincture has been used. As has been the case with so many other drugs, and with medical problems in general, such experimental studies should determine the value or the lack of value of this substance.

In 1915 as a result of experimental studies Cramer¹ came to the conclusion that veratrum stimulated the afferent fibers of the vagus nerve and caused reflex slowing or inhibition of the respirations, and in a similar fashion a reflex stimulation of the vagus center in the medulla with a slowing of the heart. Pilcher and Sollman² in the same year showed through their work on dogs that, when veratrum was given intervenously, it caused a marked slowing of the heart with a decided fall in blood pressure. The slowing of the heart and the associated fall in blood pressure they attributed to a stimulation of the vagus center, for if the vagus nerves were cut so that inhibitory or slowing impulses failed to reach the heart, they failed to get the slowing and obtained but a slight fall in blood pressure. The work of H. C. Wood, jr., on the lower animals in general pointed to the same conclusions as formulated by Cramer and by Pilcher and Sollman. Collins³ and Collins and Hanzlick⁴ carried the previously mentioned work from Sollman's laboratory to the bed-side. In their clinical studies they used the 10 per cent tincture either in the amount of 1 to 2 c.c. at a single dose, or 1 c.c. every hour until 4 c.c. were taken. Their results were very uniform and were not associated with any dangerous symptoms. They obtained a slowing of the pulse on an average to 62 per minute and a fall in systolic and distolic blood pressure of usually 35 m.m. of mercury.

The experimental work which has been conducted in this laboratory has in general followed the plan used by Sollman and his pupils. This work is very far from being completed. For this reason a simple statement of some of the results will be made without attention to the detail of the experimental evi-

dence. This data will of course be included when the studies are in form for publication. Dogs have been employed for the experiments. The animals were anesthetized with morphine-ether. Blood-pressure determinations were made by placing a glass canula in the carotid artery and connecting it to a mercury manometer. The tincture of veratrum in 0.9 per cent sodium chloride solution was given intravenously through a canul in the femoral vein. The average dose was one minim of the tincture per kilogram of body weight. When veratrum was given to animals in such a dose there occurred a rapid decrease in the rate of the heart and a fall in systolic blood pressure. In Experiment 11, the heart rate was reduced from 118 to 70 and systolic blood-pressure was reduced from 141 to 99 mm. of mercury. In Experiment 17, the heart rate was reduced from 136 to 84 beats per minute and systolic blood pressure from 118 to 90 mm. of mercury. This fall in blood pressure does not occur to the same extent if the vagus nerves be cut or if the endings of these nerves in the heart muscle be depressed by the use of atropine sulphate. After cutting the vagi or after the use of atropine there develops but little change in the heart rate from the use of veratrum. There does however still occur a fall in blood pressure which is not so marked as when the vagus nerves are functionally active. This observation clearly indicates that the fall in blood pressure from veratrum is not solely due to a slowing of the heart with a decrease in the output of blood into the vessels.

When one very large dose of the tincture of veratrum or repeated small doses are given intravenously the following effect is noted. There is a fall in blood pressure which is associated with an irregular heart action. The beat may be either slow and irregular or fast and irregular. Usually the latter type of irregularity is observed. The cause for this change in cardiac rhythm is not known. Following this second stage of the veratrum action which is of course essentially a toxic effect, the heart be-

comes very slow with a further reduction in systolic blood pressure. This is the characteristic circulatory change in the third stage of the veratrum action which is its second toxic stage. This secondary slowing of the heart with the marked fall in blood pressure and with the general symptoms of collapse occurs after the vagus never have been cut or after the use of atropine which depresses the endings of these nerves. The secondary slowing of the heart from veratrum when it is showing its toxic effect is not due to vagus inhibition of the heart rate. If such a slowing is obtained with the vagus nerves intact it cannot be relieved by atropine which abolishes the inhibitory function of these nerves. This secondary slowing is not of nervous origin but is due to the veratrum in its third and terminal stage of action depressing the heart muscle. One element in the proof for this statement is, that if the slow and depressed heart is not too severely depressed the intravenous use of Epinephrin (Adrenalin) will accelerate the heart beat and this change in rate will serve as one factor in raising systolic blood pressure.

These experiments show very clearly that, when veratrum is used even intravenously for experimental purposes in therapeutic quantities, it slows the heart and lowers blood pressure by a safe action on the vagus control of the heart. If this slowing is excessive it can be relieved by the use of atropine. The late slowing is a toxic effect which should never be obtained. It can be relieved by adrenalin.

In another series of animals an attempt was made to induce in anesthetized animals conditions in a measure comparable to the so called vascular crises which are seen clinically and in which, from a variety of causes, there suddenly occurs a constriction of the blood vessels with an abrupt and marked rise in blood pressure. It is likely during such crises in the arteriosclerotic patient that cerebral, retinal and other hemorrhages occur.

In these experiments dogs were anes-

thetized with morphine-ether, the carotid artery connected with a mercury manometer and the femoral vein cannulated for the introduction of drugs. Blood pressure observations were made every five minutes for half an hour to establish the average systolic pressure for the respective animals. One tenth of a c.c. per kilogram of a 1-20 solution of adrenalin was then given the animals intravenously. In every case such an injection resulted in a marked rise in blood pressure. At the height of the rise in blood pressure one minim per kilogram of the tincture of veratrum was given intravenously. This resulted in a sharp fall in blood pressure to or below the normal reading and was associated with a decrease in the rate of the heart. The fall in blood pressure was usually out of proportion to the decrease in the heart rate. This observation, supported by other experimental evidence suggests that some effect from veratrum other than the slowing of the heart is in part responsible for the reduction of systolic blood pressure. Sufficient experimental proof is at hand to show that veratrum not only lowers blood pressure by its cardiac effect, but it also does it by depressing the involuntary muscle tissue of the vessel wall. This action is more marked when the vessels are in a state of constriction from the effect of adrenalin, than it is when the vessels are under the normal influence of vasomotor stimuli. These experiments even in their unfinished state permit certain deductions.

1. Veratrum when properly given is not a dangerous drug for it may be given to animals even by the intravenous method without injury.

2. Both the older and the younger groups of physicians have an element of truth in their attitude towards the drug. If veratrum is given in therapeutic doses it slows the heart in a perfectly safe manner by stimulating the vagus or inhibitory centre. This action together with its effect on the blood vessel wall causes a distinct and, furthermore, a prolonged fall in blood pressure. If this

slowing of the heart and the associated fall in blood pressure is excessive, it can be relieved by giving atropine sulphate hypodermically which depresses the vagus nerve endings in the heart muscle and prevents the slowing or inhibitory impulses from reaching the heart. The heart beat accelerates, more blood is put into the vessels and through this action and perhaps other influences blood pressure rises. If on the other hand veratrum is given in excessive doses so that its toxic, not its therapeutic effect is obtained, we get a secondary slowing of the heart and a marked fall in blood pressure which may be dangerous. This secondary and toxic slowing is not a safe slowing, for it is due to a depression of the heart muscle. It cannot be relieved by atropine but it can usually be relieved by the intravenous use of adrenalin which increases the rate of the heart by acting on the endings of its sympathetic nervous mechanism.

It is not within the province of this paper to discuss the therapeutic usage of veratrum. The writer has not had the clinical experience to justify such a discussion. The following suggestion is however made. In patients with arteriosclerosis and also in patients without this pathology there frequently occurs a gradual or a sudden rise in blood pressure which may be dangerous. The heart is usually beating fast and putting an excessive amount of blood into vessels which are over constricted by a spasm of their involuntary muscle tissue which may or may not be superimposed on a chronic arteriosclerotic process. Veratrum and likely no other drug can remove fibrous tissue or areas of calcification, increase the bore of such vessels and lower blood pressure. Such an assumption would be foolish. It can however safely influence the rate of the heart so that less blood is put out into the vessels, and it can, furthermore, relax the over constricted muscle tissue of the vessel walls. Through this action it reduces blood pressure and it should be of distinct therapeutic value in se-

lected cases of high systolic pressure, in which a spasm of the vessel wall, a functional condition, and not fibrosis of the vessel wall, a structural change, is in large measure responsible for a systolic pressure which may do harm.

I have the permission of Dr. E. Pierre Mallett of Hendersonville, N. C., to report the following case which recently occurred in his practice.

W. C., male, hotel waiter, between 40 and 50 years of age. Has been very healthy but not robust. Has not been sick in bed for many years. Two or three days before the present attack he had headache and dizzy feelings. October 5, 1925, had been working all day as usual and went to bed about 11 p. m. Between two and three o'clock on the following morning he was found on the bathroom floor in an unconscious state. He was put to bed and when he awakened the next morning he knew nothing of his illness. He was sore from his fall. He went to work at 6 a. m. and worked for an hour or so, when he fell and became unconscious for the second time. He was taken home and put to bed. When seen an hour later he was perfectly conscious but excited and generally nervous. Complained of headache and imperfect vision. An examination showed a pulse of 120, systolic blood pressure 220 mm. of mercury and diastolic pressure 140 mm. Eyes were apparently normal, no paralysis and no difficulty in speech. A saline purge was given. Veratrum viride was given by reducing Norwood's tincture to one-half strength. Four drops were given every three hours and the dose gradually increased to six drops every four hours. At the end of a week his pulse was 74, systolic pressure 160 and diastolic pressure 110 mm. of mercury. He has gone back to work and is of course under observation.

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POSTGRADUATE EDUCATION—THE CHALLENGE OF ORGANIZED MEDICINE TODAY*

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Organized medicine is responding today, as never before, to the challenging duties of present day life. The great task of conserving the public health is one that is calling forth the best powers of the profession. The challenge of preventive medicine as applied by the private physician to his patient, is being brought home in better diets, preventive inoculations, and mental hygiene. The annual health examination, through the activities of some of our more progressive county societies, has already become an accomplished fact in some communities. Undergraduate medical education has been taken out of our hands; and in the grasp of some of the big foundations, is just now floundering about in rather a unsatisfactory state, from which organized medicine may yet be called upon to rescue it,—but the time for this has not yet come. Postgraduate medical education, however, is a challenge that has come to us; and is calling forth the best efforts and the best thought of our county, state, and regional societies, and the American Medical Association as never before. Of course, the scientific program of the best type of Medical Society has always been the medical man's best postgraduate course, in which he has been both teacher and student; but today, in an ever widening and broadening way, definite, constructive plans are being worked out for graduate education, on a scale never before dreamed of, and not yet quite completely sensed by the rank and file of the profession.

And wherever the profession has attempted, through channels of its own, to

broaden and instruct its own personnel, the response on the part of the individual physician has been little short of amazing, in his whole hearted willingness to embrace the opportunities offered him by an agency of his own creating. It would be difficult to name another profession whose members are so prompt to avail themselves of such opportunities for improvement; or whose leaders are so ready to respond to appeals for the rendering of such service.

It would take far too long even briefly to sketch the various forms of postgraduate education that are being tried out by organized medicine in various parts of this broad land of ours. Among the first and most outstanding of these and the one upon which many are basing their experiments is that initiated in our own state just before the war. This was a course of traveling clinical and didactic lectures in pediatrics, *offered through our several county societies*, whereby the advantages of the big medical teaching centers were brought to the very door of the man seeing the most babies and children in our state,—by whom of course I mean the general practicing physician in the smaller community. No small part of the success of this pioneer attempt I venture to say, was due to the fact that organized medicine sponsored it, vouched for it, and provided an attendance for it that assured its success, as well as its imitation in distant parts of the country.

I want to discuss with you briefly just three present-day developments along this line, in widely separated parts of the country, among widely differing types of medical personnel, with problems that one might say would be

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as widely varied as their location. After sketching these, I want to point out to you their outstanding features, with a view to commending them to you for possible imitation by this society as a definite part of its future program of activities.

Shortly after the ending of the war, the medical society of the county of Kings, New York, in pursuance of its plan to widen the scope of its activities, originated a series of weekly lectures, given on Friday afternoons at five o'clock, in an effort to choose an hour when the greatest number of busy doctors could attend them. Each was a simple statement of the outstanding features of some very common, everyday phase of medical practice, set forth by an outstanding medical figure in his best (because his simplest and clearest) style. Started purely as an experiment, the results were amazing. Special parking permits and space had to be arranged for with the police department. The auditorium of the county medical society was jammed, as many as eleven hundred out of a total membership of some twenty-five hundred seeking admission. Such a response constituted a challenge that was irresistible. The next step was to canvas the hospital and clinic facilities of the city. Many of them never before used for teaching purposes; and to organize groups for clinical study, led by the attending physicians and surgeons of these institutions, many of whom had never given a medical course of instruction in their lives, and many of whom would have indignantly denied the suggestion that they could teach. They simply showed what material they had at their disposal with comments from their own rich experience. The result was that men who had before been leaving home and practices for graduate study, at large sacrifice of time and work, or else going without it when they wanted and needed it, began to get just whatever special opportunities they needed, the better to discharge the duties of their profession. It is exactly the plan in vogue for decades in Vienna,—with the ex-

ception that organized medicine has remained in the saddle. The work now is in the hands of a joint committee on graduate medical education, composed of an equal number of members from the county medical society and the local medical school. Any community with hospitals and clinics run by competent physicians and surgeons, could do the same thing; and its medical personnel could get the instruction they need, at a tithe of the expense and sacrifice involved in going to a distant medical center for graduate study. Better yet, many men who never would or could leave for work in distant centers, would become better doctors as a result.

The second "case record" I want to discuss with you, is that presented by the Southern Pediatric Seminar, a section-wide demonstration in graduate teaching begun four years ago in our own state. Here a small group of children's men invited to their aid the prominent pediatricians throughout the whole southeastern portion of the country, together with a number of specialists in lines closely connected with their branch. The object of this group was to furnish didactic and clinical lectures and demonstrations in the latest and best developments of preventive and curative medicine for children, in such a way that the greatest number of general practitioners could avail themselves of these opportunities. The response upon the part of both teachers and students has been far in excess of what anyone could have predicted. A paid-up student body increasing in four years from three to fifty-five, led by a group of some thirty odd lecturers and teachers representing practically all the medical schools east of the Mississippi and south of Mason and Dixon's line, all serving not only without remuneration but without their bare expenses for board and maintenance,—show as nothing else could show the response of the medical profession when graduate teaching is attempted.

Certain characteristics can be traced throughout this second example, that are remarkably similar to those evident in

the first. In each case, although college teachers are prominently identified with the work, organized medicine is the directing force; and the colleges assist, but do not originate or lead. In each instance, everything taught is intensely practical, mere theory and textbook completeness receiving short shrift at the hands of the participants. In each, the clinical side is especially featured, though by no means exclusively so. And, fourth, in each case the students,—those “being done good,” in the familiar parlance of a few years ago,—are enabled to correct and vitalize the teaching, and make it conform to their wants, by suggesting changes in the courses offered, whenever such changes are needed. The great bugbear,—poor attendance,—is done away with by “passing the buck” to the unit of organized medicine responsible for the effort; which is a very different thing from working this up by some outside agency not directly in touch with the men for whose benefit the work is designed.

A third piece of definitely forward-looking work may be considered here, for its suggestive value to us in looking over the field of our duties and opportunities as a district branch. Some two years ago, the proposal was advanced by one of the regional consultants in pediatrics to the New York State Department of Health, that very practical lecture-clinics, along the lines of the pioneer clinics in North Carolina mentioned above, be offered to rural physicians on Long Island, using for lecturers various outstanding pediatricians whose work along special lines of their subject qualified them to speak as experts along these several lines. As in this pioneer course, clinical material was to be brought in by the doctors themselves. The answer handed down by the Commissioner, was to the effect that everything about the plan was approved, but that the initiative must be taken in each case by some unit of organized medicine; in other words, that the State Department of Health, while perfectly willing to finance and assist in any plan of grad-

uate medical education deemed desirable, did not consider itself qualified to instruct the doctors in their duties to their patients. This attitude on the part of a State Department of Health is certainly one to be commended. Accordingly, over a year passed before the work could be started, on the strength of a bona fide invitation from one of the groups of organized medicine on Long Island. The delay, however, was justified by the overwhelming success of the venture when it was finally launched. Attendance at each of the nine weekly sessions averaged between one-half and two-thirds of the total society membership, which included practically the entire medical personnel of the district. This attendance embraced men with no interest whatsoever in children, who came purely out of loyalty to their medical society, and who could in no other way have been induced to come with such faithfulness. As the movements previously described, college instructors were utilized, along with others not so affiliated; and in this instance a state health board was both advising and financing; but the direct sponsor of the whole effort was the medical society. It was putting on its own show, through a teaching clinic committee appointed by itself from among its own membership; the course was clinical as far as possible, with material selected from the practices of the men themselves; it was intensely practical, dealing with problems that every man had to meet almost daily in the children of his own practice; and the whole affair was sensitive to the wishes of the men whose attendance was sought. Local pride had much to do with its success, and local pride is such a case means society pride, with society interest and loyalty to vitalize it.

I venture to assert that any community in which there is an active group of men with membership in organized medicine, can acceptably offer postgraduate work in medicine to its own and neighboring medical personnels, with credit to the medical society putting on the show, and with benefit to every man sharing in the effort, whether as student

or as instructor. Such a society as this, could well concern itself with inaugurating a program of medical education for its members, using Asheville with its well-rounded medical faculty for its city base, and the various sanatoria in surrounding territory for special phases of medicine throughout the district covered, for special instruction in the branches of medicine most needed by the man in general practice. For further clinical material, there would be available the best sort of teaching stuff that anyone could want,—namely, the cases gathered up in any region from out their own practices by the men sharing in the particular course, whether as students or as teachers. When the thing is stripped down to its essentials, it will be seen that such postgraduate education offered by the medical society to its own membership, is nothing more nor less than a present-day adaptation of the old custom of "riding with" an old doctor, sweeping out his office, mixing his pills and his potions, and at the same time imbibing by personal contact some of the wonderful ability in physical diagnosis that our best modern schools fail to transmit to their graduates. Such a process was all the medical school that many of the finest of our medical fathers ever attended. This was, in essence, what can well be called "larnin'" medicine, rather than teaching it. We teach medicine in the medical school; the old doctor "larned" his apprentice, in a way that we have lost touch with. The schools turn out men crammed to an appalling degree with theory, that must be transmuted into practical sense before it can be used to the best advantage

on their patients. Some such helping hand as other medical societies are extending to their new men in some one of these forms of graduate teaching, is what our new men here need. It remains for us who are on the firing line, to "larn" these young men, just as our French and British confreres of the allied forces "larned" us of the A. E. F., when first we went into the line with them. Our various officers' schools and done for us just about as much as the medical schools are doing for their graduates today. They had crammed us with the theory of modern warfare,—but they had shown us none of its actualities. It remained in both cases for the hard knocks of actual battle experience, to fit the newcomers for the fray. Learning the art of medicine at the expense of our trusting patients, has been the experience of many of us here. What I am suggesting would minimize this rather expensive and hazardous business; with profit to the patient, to the individual physician, and to the good name of the medical profession. I have but touched upon the benefits that such opportunities would bring to the older man in practice for few or many years. Such painless rejuvenating of those of us who have borne the burden and heat of the day, would constitute a valuable and painless Steinach operation that would benefit both our patients and ourselves. Mr. President, I should like your permission, when the business session gives opportunity, to bring up for discussion, and perhaps for action, the question of the desirability of this society's embarking upon some scheme of graduate education for its members.

A BRIEF REVIEW OF FOUR YEARS' TREATMENT OF MALIGNANT AND BENIGN NEOPLASMS WITH X-RAYS AND HIGH FREQUENCY CURRENTS*

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At the Meeting of the Tenth District Medical Society at Hendersonville on October 12, 1922, I read a paper on this subject and reported a number of cases of neoplasms and other conditions. At that time I was using the 10 in. spark-gap x-ray machine with the standard Coolidge tube. In September, 1923, I installed a 200,000 volt machine using the large Coolidge eight milliamperere tube. The machine with the larger tube and higher voltage is an important advance in the treatment of many of the larger, superficial and more malignant neoplasms and decidedly an advance in the treatment of the deeply seated conditions.

The large, powerful machine gives, under heavy filtration, a ray more nearly similar to the radium gamma ray, and is much more controllable than radium. It appears now that it is not, as the Germans thought a few years ago, necessary to give an enormous dose at one sitting, extending over two to four hours, dealing at a single dose destruction to the neoplasm, and awaiting the efforts of nature to absorb and throw off the growth. In some cases this was no doubt possible, while in others the patient's life was sacrificed on the altar of scientific research. Later experience has taught that smaller doses at shorter intervals are really more effective, and do not jeopardize the life of the patient. In the large machine we have the more active or more deeply penetrating rays, which, under proper administration, inhibit the growth and extension of the neoplasm, and do no injury to the surrounding tissues; thus allowing these tissues to perform their function of disposing of the invadited cells of the neoplasm. With these evidences the large majority of those who have tried out the 200,000 volt machines are well

pleased with the results and are hopeful of greater results from the developments of the future.

In my paper read at Hendersonville, I reported what is still my banner case of carcinoma of the cervix: Mrs. L. O. G., who had been opened in an effort to remove the uterus for cancer of the cervix. It was found to be a hopeless case from a surgical standpoint and was referred to me for x-radiation in July of 1921. In about eight or ten weeks the uterus was practically healed and the patient was well. She continued in fine condition as found by frequent examinations until November, 1924. After an examination, more than a year having elapsed since the last examination, I found a small lump on the edge of the old cicatrix. This was not broken down and while it presented a healthy appearance, I used the surgical diathermy from the monopolar Tesla current and destroyed the lump with as wide an area around it as I thought necessary. I followed this with 150 ma.-minutes at 172,000 volts x-ray, repeating twice at intervals of three weeks. The ulcer caused by the electric desiccation healed in due time and on several examinations, the last one within a week, the parts seem to be perfectly healthy, with no pain, enlargement of tissues, or vaginal discharge.

For the last two years, where it is possible, in all new cases, I have adopted the method, by means of desiccation or coagulation, to destroy the neoplasm as completely as possible without injuring the surrounding tissues further than is necessary. I then follow at intervals of two to four weeks with the modified deep x-radiation until all symptoms have disappeared. I have now several cases who are symptomatically well and whom I am watching the very best I can. The sad thing in many of these cases is that, under a feeling of security caused by the enjoyment of appar-

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ently perfect health, they refused or failed to return for examination and observation until they suffered a recurrence, which had made such progress as to render the cases very difficult or impossible to control.

The results in the treatment of tumors in the breast that have shown no tendency to break down and where there is no lymphatic involvement, have all been apparently inhibited.

In fibroid uterus and menopausal hemorrhages, and hemorrhages due to the large relaxed hyperplastic uterus, which has not yielded to the usual methods of treatment, the results have been 100 per cent perfect, except in one case of a very large, suppurating fibroid uterus which we insisted on removing as a last resort. The patient absolutely refused operation and a few x-ray treatments were given, but the patient died from the effects of hemorrhages and sepsis, after we saw that it was useless to continue the treatments.

In the treatment of tonsils and adenoids about 90 per cent are so far relieved and reduced in size that they give no further trouble. The diseased or infected tonsils yield to x-ray treatment better than the simple enlarged adenomatous healthy ones. The other 10 per cent not treated by x-ray are easily removed in the larger children and adults by desiccation or coagulation, under novocaine anesthesia. My results still show that in toxic and exophthalmic goitre, x-ray in medium deep doses combined with proper medicinal, dietetic and hygienic methods, is the proper, most successful, and safest treatment.

In tubercular adenitis closed, or in open ulcers, the results cannot be surpassed by any other treatment.

Cellulitis wherever located, if treated early, is nearly always aborted or circumscribed.

In treatment of carbuncle, if seen early, it can nearly always be aborted and will get well with less loss of tissue and with less deformity by cicatrix. I recently saw such a lesion (on the back of the neck) about the eighth day, that was three inches in diameter, and pus

was already oozing from a number of small openings. I gave one heavy medium dose 9 in. gap, 10 in. distance, 5 ma. for one minute without filter; then put in four and one-half millimeters of aluminum filter, and gave seven minutes more, making eight minutes altogether. By next day the pain and burning sensation were less, and the temperature of 102 1-2 gradually subsided. The fourth day I gave another x-ray exposure for 4 minutes with 9 in. gap, 4 ma., 10 in. distance with four mm. aluminum filter. The inflammatory process was arrested without further extension as to area, the center softened and the slough came away leaving a healthy granulating area, and the patient returned to her home at Clermont, Florida, feeling fine and rejoicing in the day that she received the x-ray treatment.

I also reported one very stubborn case of lupus vulgaris which remains well. We have found that 45 per cent of all the legion skin diseases, acute and chronic, are more readily and satisfactorily cured by x-ray than by any other method.

The use of diathermy as produced by the deArsonval, the Tesla, and Oudin currents furnished by the modern high frequency machine, is growing in popularity, and new uses are constantly being developed.

At Hendersonville I reported several casts of epithelioma of the lower lip, treated by the Tesla desiccation method. About a year ago one of these cases returned with a little indurated area on one end of the scar which showed signs of breaking down. I repeated the dose on this area, going slightly out into the healthy tissue. This was followed in a few days by heavy x-raying of all the adjacent lymphatic areas on both sides of the neck, supra-clavicular and submental regions. There has been no further evidence of recurrence.

I have treated with the high frequency currents a great many epitheliomatous conditions or growths on the face, neck, ears, hands and arms, with no recurrences except the one on the lip as

mentioned above.

Most satisfactory results are obtained by the use of the diathermy currents in the treatment of neuritis, bursitis, lumbago, sciatica and stiff or limited motion in joints, following arthritis, fractures, dislocations or trauma of any kind involving joints, bones, or the soft tissue, where the neglect of motion and exercise of the injured part has left a water-logged or congested and swollen condition rendering the limb or part almost useless. We have a number of very interesting cases of this class lately and results have been very satisfactory.

In conclusion we wish to say that our experience of the last four years work has been very encouraging indeed. While we have had our failures and setbacks, the fact remains that many of these were due to the want of proper knowledge on the part of the patient as to his real condition; and, on the other hand, to the need of proper cooperation of the members of the medical profession. The common people need a greater knowledge of cancer and pre-cancerous conditions. They should be taught these symptoms and should be taught

the proper thing to do and when to do it. It goes without argument that the medical profession is the only source of information to which the people can turn. We, the members of the medical profession, should make ourselves familiar not only with cancer in its advanced state, but also of those pre- or near-cancerous conditions which are easily cured and do not metastasize if treated thoroughly and early.

The keratosis, on the face or hand; the itchy, tingling, irritated mole, wart or nevus on any part of the body; the *place* on the lip that won't heal if let alone; the lump in the breast; hemorrhage between the menses, in women over thirty, or excessive hemorrhage at the regular period; hemorrhage after the menopause; continued indigestion with loss of weight, and many other symptoms too numerous to mention, should lead the doctor to make careful investigation and arrive at a definite diagnosis as soon as possible and immediately institute a vigorous treatment, laying aside all preconceived ideas and convictions but looking only to the good of the patient.

THE TREATMENT OF SYPHILIS*

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I have no expectation of presenting any astonishing facts in this paper relative to the modern conception of the possibility of the cure of syphilis. We have at our hands a vast quantity of chemicals and drugs which many of our older men, practicing medicine today, knew nothing of only a comparatively few years ago, and although doubtless cures and arrests of the disease were obtained when the field of therapeutics was limited to the iodides and mercury, I hope to prove that with the present day method of attack we should be obtaining a much larger percentage of cures than could be record-

ed by our predecessors.

I am speaking of cures, not the spectacular disappearance of symptoms obtained in some stages of syphilis with the use of arsenicals, nor the encouraging results in general paralysis from the use of malarial plasmodia. The man who is curing his cases of syphilis with four or five injections of neo-salvarsan followed by a few doses of mercury, is a far greater charlatan and traitor to his profession than the often mentioned Judas who sold his Christ for a few of the same tainted coins that go into the pockets of such mis-informed or ignorant members of our profession.

If a doctor is to treat syphilis, one

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of the greatest scourges of man, he must be informed. Few among us would undertake the treatment of a case of leprosy, for we are not familiar with the disease; yet syphilis is a more widespread menace, and as destructive, and the improper care of the luetic causes as great suffering and horror as would a case of leprosy in the hands of one uninformed as to its management. So it behooves us to keep in the wake of our pioneers who have revealed and opened to our eyes a wonderful avenue of approach by which we can conquer the common enemy.

Syphilis is strictly a disease of man. No branch of medicine is without interest in it. From a sociological point of view it is entangled in the great unsolved problem, that of the relation of the sexes.

The history of syphilis is interesting, but suffice it to say it makes its appearance in civilized countries with the discovery of America. Unlike its two associated diseases of gonorrhea and chancroid, syphilis was unheard of before the latter part of the 15th century. Syphilis, in contra-distinction to the other two, is a disease whose characteristic course is that of a systemic infection.

I will only briefly attempt to summarize what is considered the safest way to treat the cases of syphilis as they come to us. Every lesion on the genitals should be regarded with suspicion and examined for *treponema pallidum*. The earlier treatment is begun the better the chance of preventing a general dissemination of the *treponemata* into the various organs of the body. According to the stage of the disease, the treatment may be divided into abortive, secondary, tertiary and latent, ante-natal and congenital, each differing rather markedly from all the others.

The abortive treatment means the treatment of a patient showing genital or extra-genital lesion, in which the *spirocheta pallidum* has been demonstrated before the Wassermann reaction becomes positive. It is our duty to pre-

vent a general dissemination of the disease. During the course frequent Wassermann tests should be made to determine whether the disease has remained localized, for even when the treatment is begun at the earliest possible moment, cases do occur in whom a positive Wassermann develops although intensive treatment was carried out. The patients who do not develop a positive blood are considered aborted cases and should be under observation for one year after the discontinuance of treatment. When a positive blood does develop during treatment, this case is to be considered one of secondary syphilis and treated as such.

It is safest to assume that a syphilitic infection is already fully established, not merely localized, at the time the very first sign of a primary lesion appears. Local measures to dry up the sore, or the type of abortive courses which consist of a few doses of arsphenamine with a small amount of mercury, should never be considered sufficient to produce satisfactory permanent results. A negative Wassermann in this stage of syphilis does not give any certainty as to the exact extent of the infection. The fact that we have glandular enlargement near the chancre is proof enough that the disease is not long localized. The following forms of relapses are the more frequent sequels of the short and insufficient abortive treatment: (1) re-appearance of the chancre; (2) delayed secondary reactions, delayed in some reported cases up to three years; (3) development of cardiac and aortic lesions in apparently arrested cases; (4) the birth of syphilitic child to an apparently healthy mother; (5) the infection of a sex partner, in the absence of a detectable clinical or serologic relapse.

Full courses of arsphenamin should be given, the earliest cases followed by a complete course of mercury and bismuth. From what we have learned of bismuth it can be used to alternate with or even substitute mercury but never as a substitute for arsphenamin, for little salvarsan is worse than none at all, as

it deprives the patient of the source of his resistance and offers no adequate substitute. It is a spirocheticide pure and simple. Mercury in early syphilis should never be given by mouth, but by injection or inunction.

In secondary syphilis the treatment is given in courses and must be carried out in a systematic manner. It is during this stage that more reactions do occur while the patient is under treatment. Some consider it safer to give two or three doses of mercury; but I believe bismuth is to be preferred, before employing arsenic, in order to avoid the Herxheimer reaction. The first course should be the intensive one, because rapid sterilization is desired to minimize the menace the patient is to his family and the community from mucous membrane, lip and other external lesions containing numerous treponemata. Regardless of the Wassermann reaction following this course, a second course should be given, and then, after a rest of four to six weeks, the blood should be tested again, and if positive, of course treatment should be continued; but if negative, a third but shorter course should be advised.

Patients in the tertiary and so-called latent stage are treated in practically the same manner as secondary syphilitics except, first, they are not treated so intensively and, secondly, the iodides are used freely during the rest periods. It is necessary to use caution, and careful examination of the heart, aorta, lungs, kidneys, eyes and nervous system must be made to detect organic changes, for when such changes are present, intensive treatment cannot be tolerated by the patient.

The treatment of syphilis during pregnancy also requires careful attention and the ideal place for such treatment would be a hospital. Kidney function should be especially watched. Here neo-salvarsan, because of its low toxicity, is probably best and ordinarily should be given in two courses of eight injections with two courses of either bismuth or mercury. These two courses

are usually sufficient during the period of gestation to result in the birth of a healthy child, although the mother may need more treatment later.

Treatment of congenital syphilis, to be successful, must be started early and must be given in courses. For infants and small children neo or sulpharsphenamin may be used, given intra-muscularly, and to me the more valuable is the sulpharsphenamin, being more stable, no more toxic than neo-arsphenamin, less painful, and of higher arsenical content. Then bismuth or mercury in the usual number of doses. Two full courses are given regardless of the Wassermann reaction, and usually a third course of bismuth or mercury. In very feeble infants and in the presence of active syphilitic manifestations, it is advisable to begin with bismuth, giving at least four to eight injections before the administration of arsenicals.

A patient should never be discharged as cured until the Wassermann test has been negative for at least two years after repeated testing and a provocative salvarsan should be given as a final measure. This negative Wassermann is meant to include both blood and spinal fluid. A negative blood but a positive spinal fluid means an uncured patient.

I do not intend to stress any one preparation used in the treatment of syphilis above any other, but I do want to call your attention to the value of bismuth which is one of the newer chemicals to be used for this purpose. In 1921, after many years of experiment in rabbit syphilis, bismuth was heralded as a new drug for the treatment of syphilis. It was soon learned that this metal would cause cicatrization of chancre, disappearance of the adenopathy and regression of all secondary and tertiary manifestations almost as quickly as the arsenicals. The Wassermann test in the pre-serologic period could be controlled, and if positive, could be reduced or rendered negative. Also patients who cannot tolerate arsenic react favorably to bismuth. Cases have been recorded whose symptoms have actively

recurred under arsenical treatment only to clear up under bismuth. Many cases who before were Wassermann-fast became negative under bismuth. In early syphilis spirochetes disappear from the primary lesion and from papules after the first, second or third injection, and are no more detected after the third to the fifth, less often seventh to fifteenth day. The spirocheticidal action then of bismuth is less than that of salvarsan but greater than that of mercury. It has been indicated as follows, "If the action of salvarsan is expressed by ten, then bismuth is represented by seven and mercury by four."

McCafferty and MacGregor of New York City, in the N. Y. Skin and Cancer Hospital, in a series of Wassermann-fast cases, found that in 64 per cent of the cases the Wassermann reaction was improved or rendered negative by bismuth after remaining unchanged for one or more years of arsphenamin and mercurial therapy. Following a second course the serology was further improved. Their conclusions were that they believe bismuth has a real and lasting place in treating Wasserman-fast syphilitics, and since the Wassermann test was negative for a year or more, they strongly believe in the permanency of the reduction. However, of course, a greater length of time with freedom from all treatment is necessary to prove this. Albuminuria is not produced more frequently with bismuth than with any other anti-syphilitic agent. No untoward effects are met with in bismuth therapy when properly administered.

The toxic effects of bismuth which can occur are: albuminuria, a cutaneous eruption, stomatitis, and occasional tenderness at site of injection, but less often than after mercury.

I have not purposely omitted the arsenical preparation known as silver salvarsan. There are many reports to make us know it has a distinct and valuable place and that is in the treatment of tertiary syphilis, especially neurosyphilis. It is less toxic than neo-salvarsan and causes fewer reactions. It

is frequently alternated with neo-salvarsan during a course. It has been found to reduce the Wassermann-fast reaction in about 55 per cent of the cases used.

It has been known for many years that remissions of chronic disease may occur after attacks of an acute specific fever. Only recently have any really startling effects been wrought by the induction of acute fever in persons suffering with what has been regarded as an incurable disease.

The first suggestion of possible recognition of general paralysis of the insane is generally attributed to Willis in 1581. The first undoubted case of general paralysis to be recorded in medical literature is that of John Hislam in 1798. General or incomplete paralysis and disorder of the mind, associated as symptoms of a definite disease having a distinctive pathological anatomy, was expressed in 1822. Previous to this no one had had this view, at least no one so expressed himself. Alcohol, venereal excesses and anxieties were thought to be the cause of general paresis. Noguchi and Moore discovered the spirochetes of syphilis in the brains of persons dying of paresis, a finding later concurred in by many. Wile at Ann Arbor, and others, have demonstrated the spirochete in the tissues taken from the brain of living patients by puncture. Chemical, serological and cytological formulae have been elaborated which are almost infallible in the laboratory diagnosis of paresis by examination of the fluid withdrawn from the spinal canal.

The best treatment for general paresis is preventative treatment. The drugs used in the modern treatment of lues may in many cases complete the cure of the infection. In other patients the brain is infected with the parasites, and despite every therapeutic measure the symptoms of general paresis appear.

As early as 1816 it was noted that cases of general paralysis frequently showed remissions of symptoms and often apparent cures were established after febrile illnesses. Therefore various substances were injected into pa-

tients suffering from paresis. Chemical substances were tried and discarded. Tuberculin had its trial. In 1917 nine patients suffering from general paralysis of the insane were inoculated with benign tertian malaria. Six of the patients showed favorable results. The usual technique of this treatment is: 2 to 4 c.c. of blood are withdrawn from the vein of the untreated malaria patient during a proxysm and immediately injected into the subcutaneous tissue of the buttock of the paretic. After a free period of from one to four weeks the paretic evidences the chill and fever of malaria infection. This patient is allowed to have 8 to 12 chills when malaria treatment in the form of quinine is administered. The quinine treatment of this artificial malaria is very effective and no recurrences have been noted. Neo or silver salvarsan may be given intravenously during the period of quinine treatment. Statistics vary from 35 to 55 per cent for improvement and there is hope for a large per cent of improvements if not cures in the future.

Herman Goodman has made an observation which I believe is worthy of mention here. We have all noted in various text books that certain regions of the globe are apparently free from nervous involvement of syphilis, although syphilitic infection is common enough in the same localities, i. e., the tropics. Goodman states that the reason may be a natural malaria treatment, for as every one knows a resident of the tropics easily escapes malarial infection.

The remissions following the malaria treatment should of themselves not be regarded as anything new. Remissions in paretics are as old as the disease it-

self. In fact, the first recorded case was improved to such a degree that he was discharged from the detention home only to return to die a paretic. This problem of remissions is a difficult one. Can we consider the malarial remissions as accidental?

We find the observers all enthusiastic and certain that the remissions follow the malarial febrile disturbance of the entire organism, that the remissions are more marked, more certain and do last longer. The histopathology of the brain substance of these so treated cases has revealed the picture of the so-called stationary type. The blood and spinal fluid may continue to give the positive serological and chemical tests of paresis after the clinical improvement has been established. The physical findings may be markedly diminished. To sum up the malaria treatment we may safely say the symptoms of general paralysis are mitigated by the artificial inoculation of malaria.

Purposely, I have not mentioned the dosage of the various chemicals used, for that is a matter dependent on the age, sex, and weight of the patient. Nor have I tried to settle any question as to which of the arsenicals is of greater potency. That is to be settled by time alone. But I do wish to make the plea that those of us who treat syphilis impress on our patients at the very start, that the course is long and requires active cooperation on the part of both, and lastly that we are not to let a patient go from our office believing he has been cured with a few doses of neo-salvarsan and those doses often too small for an infant, the doctor fearing a reaction.

FACTORS TO BE CONSIDERED IN THE CHRONIC
INTESTINAL INVALID*

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Inasmuch as we come in almost daily contact with patients having gastro-intestinal manifestations, it was thought not to be inopportune to bring to your attention two conditions, which are by no means new, but do not receive the consideration that their importance merit.

We are all familiar with the chronic gastro-intestinal invalid, with or without the psychoneurotic reaction, and he falls into a class never seriously ill and never well, and in the words of Weir Mitchell, apparently have an "unquenchable thirst for invalidism."

Individual symptoms widely vary, but on analysis they will be grouped around nervous irritability, fatigueability and abnormal bowel function. Examination may reveal anything from "infected tonsils to fallen arches" any of which will require consideration to "lessen the load that at any moment may break the camel's back."

As far back as 1765 Heller presented the view that "in constipation foul waters were absorbed from the feces and filled the blood with rancid parts producing fever, hemorrhage, consumption and insanity." And so on down to the present day the literature is replete with constipation and allied disorders, only we clothe it in more refined raiment and call it intestinal stasis.

John Bryant, of Boston, makes the statement that in 75 per cent of the chronic intestinal invalid type, on roentgen examination with opaque enemas, he finds ileal regurgitation. After enemata it is quite common to find a part of the ileum filled. Baetjer thinks this must not be looked upon as a true incompetency, as pressure from the enema and antiperistaltic waves will produce this condition. Only after barium has left the stomach and small intestine and is lodged in the colon and later examination shows the terminal

ileum to be filled, are we dealing with a true ileo-cecal incompetency.

Two years ago, in collaboration with Dr. Feldman we selected from the outpatient departments of the University and Mercy Hospitals in Baltimore, 60 cases of the so-called chronic intestinal invalid type and studied them clinically and roentgenographically. In 42 or 70 per cent after the barium had left the stomach and small intestines and was lodged in the colon, later examination revealed a sizable quantity in the terminal ileum. After barium enema 54 or 90 per cent showed barium in the ileum. As far as limited experience will allow, I am convinced that ileal regurgitation is an entity, and should not be glossed over with an attitude of indifference and neglect. Incompetency of the ileocecal valve mechanism permits a back flow of septic cecal contents into what should theoretically be, and in healthy individuals actually seems to be, the clean absorptive area of the terminal ileum.

Is it not logical to assume that many of the symptoms complained of can be induced by bacteria-laden material being forced upward from the cecum and colon into the theoretically clean terminal ileum? And there seems to be a parallelism between the severity of the symptoms and the degree of incompetency of the valve mechanism. Moreover there is good reason to state that it is a causal factor in the production of systemic effects, which if less tangible than some organic disease, yet is infinitely more subtle, resulting not in immediate mortality, but ultimate reduction in efficiency of the organism.

Closely allied to ileal regurgitation and really a brother under the skin is chronic intestinal stasis.

It may be defined as a condition in which there is retention of intestinal contents for a longer period than normal, associated with a toxemia of more or less severe type. Although toxemia

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has usually been synonymous with constipation, while constipation is the usual manifestation, diarrhea may exist in the graver forms, and with proper attention to the toxemia the diarrhea will clear up.

That several factors play a role in the production of this affection is evident and Friedenwald has grouped them under:

1. Bacterial invasion
2. Alteration in motility of the bowel
3. Disturbances of innervation of the bowel and the endocrines
4. Disturbances of intestinal secretions with production of various lesions of the bowel.

Of which plays the stellar role, I am in doubt, but in all probability each "speaks its little piece."

Every now and then some well meaning investigator attempts to destroy intestinal poisons by the introduction of so-called intestinal antiseptics.

In 1907, Metchnikoff, the Russian investigator, in his paper on the "prolongation of life" advocated the implantation in the intestinal canal of harmless organisms to overcome the toxemia caused by pathogenic bacteria. He recommended milk impregnated with *bacillus bulgaricus*. Shortly after Herter and Kendall demonstrated that the *bacillus bulgaricus* does not grow and cannot be propagated in the intestine.

Morro, in 1900 described an aciduric organism, the *bacillus acidophilus*, commonly observed to a greater or less degree in the intestines of nursing infants. This was at first thought to be the predominant organism, but after closer study the *bacillus bifidus* was accepted as the predominant form. However after an infant is given food other than from the breast the number of *b. bifidus* becomes diminished and *acidophilus* forms are increased, and soon the flora consists almost entirely of *b. acidophilus*. After breast feeding has been discontinued for sometime the *acidophilus* becomes overshadowed by other organisms and in adults few or no acid organisms can be obtained, being replaced

by many forms of proteolytic bacteria.

Herter, Kendall, Hull, Rettger, et al. demonstrated that by implantation of *b. acidophilus* the putrefactive organisms decrease in number and disappear leaving a preponderance of *b. acidophilus* in the bowel.

That the type of bacteria in the intestine is largely dependent upon the character of the diet there can be no doubt.

Herter and Kendall, in 1909, demonstrated a definite relation between the character of food and the intestinal flora. A diet rich in animal protein produces a flora with proteolytic putrefactive organisms predominating. While in one rich in carbohydrates the organisms predominating are aciduric. As a result of the proteolytic action of the putrefactive organisms, toxins are produced which are a factor in the production of the toxemia. I do not believe that this can be accomplished without impairment of the protective resources of the intestinal mucosa, which leads to infection of the mucous membrane, and allows passage into the blood stream of organisms from the bowel.

Ravenal and Hammer were able to recover the *bacillus of tuberculosis* from the blood in animals fed on the organisms in a large percentage of instances. It is interesting to note that when animals fed on fat at the time of the ingestion of the bacteria a larger number of positive cultures could be obtained than from fasting animals.

McCarrison was able to produce severe types of colitis and stasis by feeding animals with faulty food over a long period of time. Friedenwald and Leitz, in 1909, from experimental evidence, maintained that regulation of the food and proper attention to the bowels was the method *par excellence* of overcoming excessive bacterial growth and accompanying stasis in the intestine. There is little evidence to indicate that putrefaction and stasis can be obviated by the use of the so-called intestinal antiseptics.

While the x-ray offers a valuable adjunct in determining the motility of the bowel, caution should be observed in

accepting this method as an absolutely correct means of determining intestinal stasis, and only when clinical and objective signs of disturbance of motility are noted, can x-ray studies be relied upon. The administration of carmine or charcoal and watching for the elimination in the stools offers a very reliable guide in determining the degree of stasis.

The factors revealed by the x-ray are various malpositions, spasticity, cecal dilatation, ileo-cecal incompetency and various kinks and membranes, as Lane's and Jackson's, and adhesions. By these malpositions, etc., disturbances of the physiology are produced often such as to occasion marked changes in the musculature and resultant increase in bacterial growth. The ratio between the intestinal delay and the individual defensive power to eliminate and destroy toxins determines the degree of toxemia, and, while disturbances of motility play an important part, I do not believe the mechanical conception is alone sufficient to account for everything observed in chronic intestinal stasis.

By numerous authorities it is agreed that the nervous system and its close alliance with the endocrine glands play an important role in the production of stasis.

The vegetative nervous system is made up of the sympathetics and the autonomies, both supplying the viscera and under control of the endocrines. The two systems seem to be functionally antagonistic. The autonomies stimulate motility, secretion and sensation while the sympathetics inhibit them. When both systems act harmoniously normal function results. According to this theory stasis can be brought about by a break in this functional equilibrium. Emotional states as anger, fear and pain will bring about inhibition of the intestinal motility by acting centrally upon the sympathetic nervous system. According to Hurst a reflex inhibition leading to intestinal stasis may be produced by stimulation of sensory nerves. Thus the discomfort of gall bladder colic and appendicitis may re-

flexly give rise to stasis. Post-operative stasis is frequently due to reflex inhibition produced by manipulation of the bowel especially traction on the mesentery.

It is interesting to observe the relation of the vegetative nervous system and the endocrine glands in the production of stasis. Rolleston demonstrated that in myxedema the use of thyroid will relieve the stasis and we all know the effect of pituitary on the intestinal movements. While it is apparent that the nervous system with its relation to the endocrines plays an important part in stasis, more water will have to run under the bridge before we can see how far influence is brought to bear in this direction.

Possibly the most important cause of toxemia from the intestinal tract is the disturbance of the intestinal secretions associated with focal infection from the wall of the bowel. Absorption becomes increased and the toxins pass through the intestinal tissue. Adami points out that in consequence of stasis there results a low grade subinfection of the bowel. Lymphocytes are constantly conveying small numbers of bacteria by way of the lymphatics to the blood. In health they are rapidly destroyed by the liver and spleen. Substances absorbed from the digestive tract, before entering the blood stream are carried to the liver, and it is part of the liver's function to destroy toxins. Hence when the liver is diseased or functionally incapacitated and stasis occurs, in all probability many organisms reach the circulation and a toxemia ensues. However, for this to occur, as has previously been quoted from Hurst, there must be impairment of the intestinal mucosa and a "break in the first line of defense." Smithies holds that an actual invasion of the terminal ileum and colon by bacteria can be demonstrated and says that post-operative adhesions are oftentimes due to a "preoperative colitis."

While there is much discussion as to the nature of intestinal toxins it is generally conceded that the basic amines are the most important, produced by the

putrefaction of amino acids with loss of carbon dioxide. And it is quite possible that some still unknown poison gets in its work and there may come a time when evidence will be adduced to substantiate, beyond the shadow of a doubt, the intestinal origin of pernicious anemia.

A few words concerning treatment:

Assuming that ileal regurgitation is a type of stasis, we may consider the two together. Where the valve mechanism is inefficient it is logical to assume that the inefficiency is permanent. In stasis where mechanical causes are found such as angulations, kinks, etc., surgery offers the method of choice; but these cases should be followed up by the various means at our command, with the hope of restoring normal bowel function. In the milder cases of stasis where a neurosis is outstanding, they do very well under a well regulated rest cure and supportive treatment. They should be taught that while a daily evacuation of the bowels is desirable, nothing terrible will happen if they should go over twenty-four hours. In the more severe forms of stasis, and those where ileo-cecal incompetency is found the problem then becomes one of offering a diet which will provide the least favorable field for the growth of putrefactive bacteria, and one which will put a mini-

mum of strain upon the metabolic processes of the organism.

The best diet is a balanced diet containing everything, and everything in moderation. Instead of the animal proteins results can be accomplished better by the use of meat substitutes and the protein-rich vegetables. The more simply the diet is applied the better the results. Elaborate dietaries and caloric schedules are not necessary. The patients weight will serve as a guide as to his basic needs.

In the beginning one of the acidophilus preparations may be employed to help rid the bowel of putrefactive organisms, and the condition to be taken care of later by the diet alone. It would be just as sensible for one to eat everything that his taste may call for and deluge himself with acidophilus milk as it would be for a diabetic to eat all the starches he cared for and inject insulin, q.s., to take care of them. The major portion of the treatment should be carried out broadly as individual cases differ widely.

Many problems remain unsolved and it will take the combined efforts of us all, including the physiologist, pathologist and bio-chemist to unravel the mysteries that confront us in the chronic intestinal invalid, whose cause has too long been neglected.

THE TREATMENT OF ECLAMPSIA*

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One of the most dangerous complications that may befall the pregnant woman is convulsions attended by coma, known as eclampsia. This condition claims for its victims 25 per cent of the women who die as a result of childbirth. In the period 1911 to 1920 the number of cases of eclampsia at the Frankfort Gynecological Clinic reached a maximum of 1.2 per cent in 1911, and a minimum of 0.2 per cent in 1918. In 1917 the incidence was .5 per cent. In 39,461 labors at the Zurich Clinic dur-

ing the period 1895 to 1920 the occurrence was .52 per cent or about 1 in 200 pregnancies.

The frequency in this country is a great deal higher than is commonly thought. It ranges between 1 in 79 patients according to Cragin, to 1 in 134 patients, according to the New York Lying-in statistics.

In spite of the enormous amount of study that has been put upon it, the real cause of the disease is still unknown. A review of the literature but serves to show the numerous theories offered for its cause, and to emphasize the appar-

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ent conflicts in the results of the experimental work aimed at determining just what takes place in the body during eclampsia.

Stroganoff suggested that it is an acute infection, but no germ has been isolated that could be considered causative.

Some observers believe that diet has something to do with it. They point out that the incidence of eclampsia in Germany declined 50 per cent during the war, when the fatty and protein diet was low. Stoekel and Fuerst question these statistics and their significance.

Endocrine imbalance has been suggested.

The usually accepted explanation is that there is a toxic substance circulating in the blood stream, producing necrosis of the liver, degenerative changes in the kidneys, and acting upon the anterior cerebrum produces the convulsions.

There is then the question as to just what this toxin is. Bouchard, in 1887, advanced the idea that eclampsia resulted from the accumulation of retained waste products of pregnancy, and thought that the blood of such patients could be proven toxic. These ideas were apparently disproven by many observers. Talbot now revives this idea and believes that the retention is caused by an inhibitory action on the kidneys from some foci of infection. He reports 97 cases of eclampsia with such foci in the teeth or elsewhere.

Musser and Randall believe that there is a very close similarity between the symptoms and course of eclampsia, and those of acute glomerular nephritis. The sudden onset, the high blood pressure, the edema, urinary findings, eye ground changes, and clinical course are very similar. In making the comparison, they show how rapidly each condition may clear up; quoting Volhard who says "glomerular nephritis cures itself rapidly after the removal of the cause. The prognosis rests on the duration of the anemia of the kidneys, rather than on the severity of the nephritis, for if relieved at once, no signs of changes in

the vessels are seen, while if left for a long time, severe organic changes may be noted. Henselman believes that the renal changes in both are due to a toxin causing a spasm of the blood vessels of the glomeruli.

Van Lyden points out that one of the characteristics of the true nephrosis of pregnancy is the rapid disappearance of all urinary signs following the emptying of the uterus.

Musser goes on to say, "The edema is probably due to the same cause as edema in any nephritis. It may be due to (1) injury to the capillary endothelium causing an increased permeability, (2) increased affinity of the tissue colloids for water due to the accumulation of acids in the tissues, or (3) failure of the kidneys to excrete salts and water, the convulsions being due to edema, and consequent anemia of the central nervous system. The hypertension is a conservative affair to force blood through the brain and kidneys.

Others, Williams among them, object to the idea of eclampsia being a nephritis, and point out that the only characteristic changes are the presence of a periportal thrombosis of the hepatic lobules, together with some necrosis of liver cells. Smith, working with liver function tests, reports that changes in eclampsia, while suggestive of lessening of function, are inconstant and not remarkable.

Another theory of the cause of eclampsia, is that there is an incompatibility of the body fluids between mother and child. Ottenburg states that toxemia occurred 16 1-2 times as often when the fetal and maternal bloods were incompatible than when the bloods were in the same iso-agglutination group.

These, and thousands of other facts worked out, possibly need only a clue to enable us to piece them together and arrive at the solution.

But at present, after all is said, the truth stands that we do not know the cause of eclampsia. It is also true that over 20 per cent of the women who develop eclampsia die, and this has hardly been affected by changes of treatment

in the last one hundred years.

Statistics of the mortality vary from 5.31 per cent (Stroganoff) to 45.7 per cent (Buttner) for the mother and from 3.62 per cent to 42 per cent for the child. De Lee says: "For the child the chances are not good, nearly one half dying from toxemia, prematurity, asphyxiation by the repeated convulsions of the mother, and prolonged cyanosis, drugs, morphine and chloral given the mother, and injuries at forced delivery. In rare instances, the convulsions may cease without interrupting pregnancy, and the patient may deliver a live child at term; more usually the attack kills the fetus, the symptoms abate, and the product of conception is later expelled.

Since we do not know the cause of eclampsia, our treatment must be empiric. Even so, more can be accomplished by prevention than by treatment. We cannot prevent the action of the primary cause of eclampsia; but, by careful watching, we may note the first sign of such action, and by taking appropriate steps, either ward them off entirely, or interrupt pregnancy before the disease reaches a climax. It is the pregnancy that favors the development of eclampsia. If we cannot prevent the disease, we can, by emptying the uterus, almost invariably prevent a fatal termination.

Pre-eclamptic conditions are recognized by the symptoms of headache, dizziness, nausea, etc. A rise in blood pressure is the most important sign. The rise of pressure precedes by many days the toxic picture in either blood or urine. *Albuminuria and edema are unreliable signs.*

Vogeler, in 1907, directed attention to the importance of watching closely the pregnant woman with increasing hypertension, for symptoms of impending eclampsia. The normal pressure for the patient should be established early, and should be taken at frequent intervals. A rise, especially above 140, should arouse suspicion, and the patient should be given absolute rest in bed on a non-protein, low salt diet. The bowels should be opened well and water forced. If the symptoms are severe, the only

food given should be glucose by rectum. Calcium and ammonium chloride may be given for diuretic purposes as advised by Keith.

If the patient improves, she may be allowed up in a few days under careful observation. But eclampsia is not always a preventable disease, and if the blood pressure continues to rise, labor should be induced, usually by packing.

But suppose such a patient suddenly goes into eclampsia; or is first seen in an advanced stage of the disease, a convulsion having occurred, or one being imminent. The case at once takes on a very serious aspect. The nervous system, thrown out of balance by one convulsion, tends to another.

The two plans of treatment are the conservative, and the radical.

The conservative treatment, as instituted by Stroganoff, consists in giving the treatment already outlined under prevention, with the addition of morphine and chloral, bleeding in severe cases, and the non-operative induction of labor. He states that in the expectant treatment venesection is not the chief factor as excellent results may be obtained without it.

Stroganoff in 1908-1911 reported a mortality of 66 per cent; in a recent series of 246 cases a mortality of 2 per cent. Infant mortality was not given.

No one else apparently is able to obtain anything like so low a mortality even when using his treatment. Casta had a mortality of 20 per cent in 100 cases treated by Stroganoff's method.

Radical treatment consists in doing an abdominal Cesarean section as speedily as possible. The advocates of this method of treatment base their argument upon the fact that eclampsia is associated with the presence of the fetus and placenta in the uterus. It is a generally accepted fact that the convulsions usually cease or become less severe after the uterus is emptied.

The method of choice for rapid delivery when dilatation is not complete, is of course. Cesarean section. If *accouchment force* is practiced, the fetal and maternal mortality rises to a great height. Some of the statistics with

which the champions of the radical treatment round out their arguments are given as follows:

Fuerst, W., "Transperitoneal Caeserian section in Eclampsia," reports 238 clean cases of Caesarian section done by various surgeons with 9 maternal deaths, four of which could not be attributed to the operation. The maternal mortality was 2.1 per cent; fetal 3.2 per cent. He states that, at the Zurich Clinic, abdominal Caesarian section is considered the only allowable method of effecting a rapid delivery when there is insufficient dilatation of the soft parts.

McIlwraith, Associate Professor of Obstetrics at the University of Toronto, reports seven cases. The last two mothers were both in a moribund condition on admittance.

Trout reports 6 Caesarian sections done for eclampsia in which there had been no interference. All of these, together with the six babies, lived. He also reported three sections done, after high forceps had been attempted, with a mortality of 100 per cent.

DeLee quotes Freund as collecting 551 cases of eclampsia from the Berlin Charite which were delivered within an hour after the first convulsion, with no mortality attributable to the operation, and in 1918 showed that the conservative treatment gave a maternal mortality of 14 per cent and that 47 per cent of viable children died.

Caesarian section for eclampsia has been most bitterly condemned by some authorities and most warmly supported by others of equal prominence.

My belief is that when a woman develops convulsions from eclampsia the first thought should be the termination of the basic cause by emptying the uterus.

If the woman be a multipara at full term the induction of labor by packing may be best, together with the expectant treatment. But when convulsions occur in a primipara,—and three out of four cases are in primiparae,—unless the patient is actually in labor, there should be no vaginal examination, with its possibility of infection, but preparations

should be made with all haste to perform an abdominal Caesarian section.

Report of Cases

Mrs. W. F. H., aged 22, was admitted August 25, 1925. Two days before, a puffiness was noted beneath her eyes. The next afternoon she had a headache and sent for her doctor. Her blood pressure was found to be 180; urine negative. At eleven that night she had a severe headache in spite of the treatment of rest, limited diet and active purgation. When the patient was seen the morning of admission she was blind, her eyes bulging with a peculiar stare. Physical examination showed a robust white woman with general anasarca. No areas of infection found. Urine was very scant, 4 plus albumin and 3 plus diacetic acid. She was eight and one-half months pregnant. Shortly after admission the patient had a hard convulsion. Caesarian section was done under ethylene, and a live child delivered. Post operative treatment consisted of morphia p.r.n., and glucose by rectum. 8-26-25 urine showed only a trace of albumin, no diacetic, several casts. On the 29th, only a trace of albumin. Entirely clear Sept. 1. Vision partly returned after two or three days, wound healed well; left hospital with her baby Sept. 17.

Mrs. E. T. Admitted 9-12-25. Pregnant eight months. Had complained of seeing spots before her eyes for a day or two before the climax was reached, but her doctor was not sent for until she had a convulsion. She was brought to the hospital immediately. Urine contained albumin so thick that it would pour from a tube with difficulty. She had little edema. Abdominal section was done under ethylene. A live child was delivered. Patient had no more convulsions. Her urine became normal in a few days. She left the hospital with her baby on the 14th day.

Mrs. C. P., aged 18. Seven months pregnant. Admitted 9-25-25. There were practically no prodromal symptoms. Her doctor was called to find her unconscious after a convulsion. Her systolic blood pressure was 174; urine

scant and loaded with albumin. Abdominal Cæsarian section was done at once under ethylene anesthesia. Patient was returned to her room and given morphia gr. 1-4 and one pint 5 per cent glucose by rectum. About fifteen minutes later she had a hard convulsion and was unconscious and delirious. Another quarter of morphia was given. About thirty minutes later patient went into another convulsion, and about fifteen minutes later another one. Five hundred c.c. of salt solution containing 50 gms. of glucose, was run into a vein, and 30 units of insulin given. This seemed to entirely clear her mind, for within a few minutes she was talking quite rationally. She was totally blind and remained so for two or three days. The urine quickly returned to normal. She made an uneventful recovery and

left the hospital with her baby at the end of fourteen days.

1—Musser (Mayo Clinic Papers, 1924).

2—Fuerst W. (Zentralbe f Gynack, 1924).

3—Talbot (Sy. Gyn. & O., Feb., 1919)

4—Musser and Randall (Mayo Clinic, Vol., 1924).

5—Volhard (Quoted by Musser).

6—Smith (Amer. Jr. Ob. & Gyn., VIII 1924, 298).

7—Ottenburg (Jour. Amer. Med., 1923).

8—Stroganoff (Muenchen Med. Wehnschr, 1924).

9—Costa (Semana Medica, 1922).

10—Fuerst (Zentralbl f Gynack, 1924).

11—Trout (Sy. G. & Ob., 1918).

THE ASHEVILLE MISSION HOSPITAL*

H. H. BRIGGS, M.D., Asheville

In 1884 a few philanthropic women of Asheville banded together to visit the homes of the unfortunate. These women soon found it necessary to have a place in which a few of the sick poor, who could not be properly cured in their own homes, could be taken care of. A house with two rooms was secured; a woman to do the work of nursing, and the sum of \$10.00 was donated to finance the work. This institution was known as the Flower Mission.

In September, 1885, an informal meeting of ladies was held at the residence of Mrs. W. C. Carmichael, at which it was decided to open a charity hospital. A board of lady managers was chosen from the different religious bodies of the town.

The hospital was opened, October 6, 1885, in a small five room cottage on South Main street, the rent of which (ten dollars per month) was guaranteed by the county commissioners, on

application of Capt. T. W. Patton. In response to an appeal put in the papers some furniture and a small amount of provisions were sent in. The services of a matron were secured at ten dollars a month, and the first patient was admitted on October 17. Dr. W. D. Hilliard consented to take charge of the medical department for the first three months.

In February, 1886, the hospital was removed to a house on Haywood street, owned by Mrs. V. S. M. Chapman, and the late Dr. W. L. Hilliard made application to the county commissioners for an increase of appropriation, which was raised to thirty-five dollars per month, and continued at that sum for several years.

In the early part of the year 1887, the managers received a proposition from T. W. Patton and L. Pulliam to purchase the property on Charlotte street, belonging to Mrs. Hawley. The price of this property was six thousand and three hundred dollars (\$6,300), which these gentlemen agreed to assume, the hospital paying interest on

*This is the third of a series of sketches of hospitals written at the request of the Editor, who is especially glad to have this for publication in the Western Carolina issue.

this sum at the rate of seven per cent per annum which was less by forty dollars (\$40.00) than they were at this time paying for house rent. In case the property proved unsuitable for the purpose, or depreciated in value these gentlemen proposed to take it back at the original cost. After due deliberation and inspection by the ladies and physicians this proposition was accepted, and possession was taken in February, 1887. After this move, the hospital prospering beyond the expectations of the ladies, and finding themselves not only able to meet current expenses, but to accumulate something toward the purchase money, it was decided to assume control of the property, which was done by an act of incorporation obtained from the clerk of the superior court of Buncombe County, in June, 1888, Mr. George A. Shuford, acting as legal advisor.

On March 7th, 1891, the hospital authorities obtained an amended charter from the legislature through their attorney, Mr. G. A. Shuford.

Today the Mission Hospital represents the best in equipment and service. Its buildings are fireproof; the wards, both free and pay, are large and well ventilated; rooms furnished after the most approved style; it has the services of a capable staff, and force of nurses available at all times.

In 1924, the late Mr. E. D. Latta became greatly interested in the work of the Hospital. In making his will he provided funds with which a new home for nurses will be erected, and also funds with which a new maternity ward will be built; thus increasing greatly the capacity of the Hospital to serve Asheville and Buncombe County people. This endowment amounts to \$1,000,000.00.

The institution has laboratory and x-ray departments, and very soon will have resident physician and interne service.

The success of the hospital during its many years of hard struggle was due to the untiring efforts of its board of lady managers, and to the late Dr. M. H. Fletcher, who labored unceasingly for the welfare of the institution, and who was Chief of Staff from the early nineties until three years ago, when his illness brought on by his service in the World War incapacitated him for this duty. Dr. M. C. Millender succeeded Dr. Fletcher, serving until March of the present year, when he resigned and Dr. H. H. Briggs was chosen as his successor and is now Chief of Staff. There are thirty members of the Visiting Staff, representing surgery, medicine, and the various specialties. Miss Vaughn Andrews has been an efficient superintendent for the past seven years.

MARSHALL HALL FLETCHER, M.D., F.A.C.S., AN APPRECIATION

J. HOWELL WAY, M.D., Waynesville

Descended from a sturdy virile stock which has for some centuries furnished the British Isles with numerous citizens of rank and character, and a people which transplanted to American soil more than two hundred years since, has given an equally good account of itself in contributing useful men and women to the state and nation, the subject of this sketch was born Dec. 20, 1858, at the old Fletcher homestead, a few miles south from Asheville, N. C., on the Hen-

dersonville road. His father, himself a highly respected and honored member of the medical profession, the late Dr. George W. Fletcher, was born at the same place and resided there following his marriage to Miss Elizabeth Ann Clayton. Before his father, his grandfather, John Fletcher, who was wedded to Miss Martha MacBrayer, had resided there on property originally settled on by the great-grandfather, William Fletcher, shortly after his discharge

from the Continental Army at the close of the Revolution. Five Fletcher brothers fought on the American side in this conflict, and history records the death of two of them at the battle of King's Mountain.

The son of an educated and successful physician, and bearing the name of the distinguished English physician and writer, Dr. Marshall Hall, apparently young Fletcher easily and naturally enough selected medicine as a profession, and after receiving such preliminary education as the local schools afforded, he was sent to Weaver College. He then spent two years in study at Bellevue Hospital Medical College in New York City, was graduated with the degree of Doctor of Medicine and served two years as resident physician in the Jersey City Hospital, N. J. Returning to his home state, he successfully passed the North Carolina State Board of Medical Examiners at its initial meeting the the West with the Medical Society of the State of North Carolina, held at Asheville in 1881, less than a year after the completion of the W. N. C. Railway to Swannanoa Junction as Biltmore was then known. At this session of the State Medical Society, in company with his father, Dr. George W. Fletcher, he joined the society along with Drs. W. L. and W. D. Hilliard, D. J. Cain, Percy T. Norcop, W. C. Brownson, Jas. G. Hardy, M. F. Broyles, and Jno. Hey Williams, composing the Asheville members of the profession, and Drs. R. J. Wilson of Swanannoa, J. A. Reagan, and H. B. Weaver of Weaversville—all Buncombe County physicians.

In addition to the Buncombe County physicians joining the State Medical Society at this first session held in the mountain district, there were also admitted to membership Drs. J. M. and Samuel Harley Lyle of Franklin, Macon County, and Drs. W. Latta Reagan and Jas. G. Craigmiles of Madison County, both lately removed from Buncombe. These were the first physicians west of Morganton to unite with the state medi-

cal society.

Following a short residence at Shufordville, as the local P. O. at Fletcher's was known then, in practice with his father, Dr. H. M. Fletcher in the winter of 1884-5 removed to Asheville where he immediately became a potential factor in professional affairs; assisting, along with the Buncombe County doctors mentioned above with Dr. Jas. A. Burroughs (who had preceded him a year or two in locating in Asheville), in the organization of the Buncombe County Medical Society of which he was a most consistent and helpful member to the day of his death. Of his affiliations with the county and the state societies it may be truly said, neither ever had a more loyal member or one who more earnestly strived to serve their best interests in every possible way. His zeal in their affairs was unflagging, and whether as member in the ranks or in official position, Dr. Fletcher could always be counted as a physician, who with wise and discriminating judgment loyally promoted whatever he believed for the development of medical organization. At the same time, those of us knowing him intimately, well recall that he always took careful note of the relation of the profession's affairs as affecting the public at large. He was a broad and wholesome mentality capable of seeing the many sides of things affecting humanity, and with rugged honesty of purpose standing loyally for the right in all things. His medical society activities included membership and regular attendance on the sessions of both the State Medical Society and the American Medical Association. In the state society he, from the very first, manifested a deep interest, and besides regular attendance took a very active part, functioning in discussions and serving on important committees including the "Re-organization Committee" of 1902-3 which gave us in N. C. our present State Medical Society Constitution and By-laws with membership in county societies as the fundamental unit of all professional or-

ganization. The choicest honors all came to him unsought; in turn he was first vice-president in 1901, member of the N. C. State Board of Medical Examiners from 1902 to 1908, and president in 1915-16. He was also a member of the American College of Surgeons and deeply interested in its uplifting influences upon the practice of surgery in America.

In aiding the ladies of the Asheville Flower Mission in promoting the organization and development of the first permanent local hospital to be established between Charlotte, N. C., and Knoxville, Tenn., Dr. Fletcher undoubtedly performed a service to his profession and to the people of this section the influence of which is difficult to properly estimate in its far reaching and helpful power for good. When he came to Asheville its medical profession, then as now, ranked as containing an average high grade type of trained medical men—at that date, 1884, more than one-fourth of the profession had enjoyed the benefits of post-graduate study for prolonged periods in European centers.

Becoming chief of the staff at the Mission Hospital in the period of its infancy when the equipment was extremely limited, the service indifferent, and the possible rewards only alluring from the viewpoint of a duty performed, he resolutely set himself to the task of creating a real helpful thing where only a necessity had previously existed. How well he, with the constant and untiring efforts of the noble women of the Flower Mission, built on the originally pitiful foundation, time and resulting progress attest. He was the master builder under whose inspiring touch the old semi-dilapidated four-square, eight-room Hawley home evolved into the present-day handsomely appointed, well equipped, Mission Hospital, easily admitted on all hands as one of the most successful of the quasi public hospitals in the state. His hospital work, as it grew, and the grave responsibilities of being through these long years the chief of service, removed Dr. Fletcher from the

honorable rank of being one of the community's most valuable and respected general practitioners of medicine and wise family consultants, and made him one of the best all-round general surgeons of North Carolina. The institution was ever his constant pride, and regarded by himself as his life's greatest accomplishment.

With the passing of time, and the broadening of his knowledge and his vision, there inevitably came the appreciation of the greater possibilities in hospital development and accomplishment than even he, and his devoted loyal co-workers had been able to attain to, and his President's Address before the Medical Society of North Carolina, delivered at the annual session in Durham, April, 1916, may well be accepted as Hall Fletcher's ripened knowledge and fruited wisdom on the subject of hospitals, when he made one of the generally accepted most masterful Presidential Addresses in the history of the North Carolina State Medical Society, a strong and powerfully convincing plea for community, or county hospitals. As he then truly said: "supported in large measure by county taxation, a well equipped laboratory is needed for its own use as well as to make laboratory tests and examinations for all the physicians of the county." And again when he said: "As much as we deplore it, it is a fact that the family physician is disappearing from 'the community, and the so-called 'grouping of physicians' taking his place; and this group centering around an individual or a private hospital. I should think there would be far less danger of commercializing our profession, by having the grouping take place around the "Community Hospital", where every doctor has developed special skill along special lines, loves certain kinds of work better than he does a dollar, and who does certain kinds of work better than anybody else in the community, should be given an opportunity to further develop his skill."

In the very near coming years, when the issue of the public, through all of its tax-payers, assuming the responsibility of housing and caring for its sick, in the community or in the county as a public duty is seriously pressed, as it inevitably will be upon the public conscience, this masterful address of Dr. Fletcher's will be quoted as coming from one whose matured experience entitled him to "speak as one having authority."

Of the medical men of Asheville whose thoughtful planning and earnest labors have given that fair city a health department famed and of recognized national character, none from the earlier days of the growth of health service were more zealous, or gave more freely of time and talents than Dr. Fletcher; he being one of the founders of the health movement, and for several years serving as a member of the local health board. At one time he accepted the challenge of a political friend and ran for a place on the board of aldermen of his city for the purpose of better serving the health interests of his community. In politics he was a democrat who believed in party organization and party government, yet he was resolutely mindful of the advisability always of securing honest and worthy officials for political preferment. He was a Christian gentleman of the highest ideals, a consistent member of Trinity Episcopal church at Asheville, and served for a number of years as vestryman.

Among the numerous civic activities he found time for, despite the always insistent demands of a large practice, was the good-roads movement. Developing as this did earlier in Buncombe County than in most sections of the state or nation, this effort for better transportation facilities found in him an early and persistent advocate. He served some time as an official of the Buncombe County Good Roads Society.

While never able (and I seriously doubt if he ever was really willing to try to do so) to entirely divorce himself from the many humanitarian demands accruing from his long years of work as

a general practitioner of medicine in town and country, during the latter half of his professional career he devoted himself chiefly to surgical work attaining a high degree of success. He carried to his end the confidence of both profession and laity; confidence in the belief that his every surgical advice was ever prompted alone by a desire to afford the greatest possible benefit to his patient. Conscientious in his mental concepts, he carried it into his every phase of life work.

When the United States declared war against Germany, Dr. Fletcher was beyond the age of usual military service, but he was among the first of the more than twenty splendid members of the Buncombe County profession of medicine, who patriotically volunteered. He was tendered, and accepted, a commission as Major, Medical Reserve Corps, Army of the United States. Later in the year 1917 being sent for training to Ft. Oglethorpe, and during the following winter attached to his organization, Base Hospital Unit No. 65, Major John W. Long, C. O., and sent to Kerhuon, France, where he functioned as an active member of the surgical service until the close of the war.

Returning home in 1919, and attempting to resume the duties of his former active practice, it was soon evident to his many friends, and as well, to himself, that his work was well nigh done; that the severe and unusual duties incident to an efficient medical officer in time of war, had in all probability, if not incited, had at least, hastened the subtle processes of physiological decline. It was in vain he sought relief at the hands of some of America's most celebrated men of our profession; the relentless forces of nature hurried him on, and on Friday, January 30, 1925, in his home at Asheville, N. C., this good man passed to his final reward, mourned by a devoted wife and daughter, and a vast number of friends and former patients, as well as appreciative citizens who recognized the going of one of the cities'

foremost citizens and greatest physicians.

Dr. Fletcher was married, Sept. 23, 1886, to Miss Jessie Winne Rosencrans, Albany, N. Y., who survives him. Of this union four children were born, three of whom preceded their father, one daughter alone surviving, Lillian, the wife of Mr. Wm. M. Smathers, widely known as one of Asheville's foremost merchants.

While admittedly recognized by the members of the local profession as dean of the medical faculty, and cheerfully waiving him that preference, it is in no sense a detracting from the distinctions and the honors justly accorded our deceased brother and friend, to say that he achieved his great success in life

through his personal honesty, his boundless integrity, and his earnest sincerity of purpose at all times, and in all things, plus the exercise of a degree of energy put forth by only a few men.

He was preeminently a fearless, honest, upright man, clothed with the fear of God, and imbued with kindly respect for his fellow men, a good citizen, a capable physician and skilled surgeon. He never knew effort too great for the accomplishment of the things he regarded as the call of duty;—inevitably success, and preferment that was due such a man came.

Peace to his memory. Inspiration in the study of his life activities and success.

"Health Audit"—Aid to Longer Life

By Charles H. Mayo, M.D., Rochester, Minn.
Member Gorgas Memorial Institute

In the past twenty-five years more has been accomplished in medicine than in all the centuries before. Scientific medicine has done about all it can for the mass diseases, now practically gone, but which used to frighten and destroy the people by tens of thousands.

In the fourteenth century fifty million people died of the plague. There was only one way of escaping it, and that was for people to leave their homes and run away to places free from it. In the eighteenth century many millions, probably one hundred millions, died of nothing but smallpox.

Today each man is dying his individual death, and it is up to us to see if we cannot reach him in some manner and persuade him that it is worth while, when he is still vigorous, to learn to keep his machinery from going to pieces from neglect.

In the sixteenth century, man had but twenty years of average life. It is fifty-eight today, and you wonder whether you will be able to reach the three score and ten of the Bible. We hope to be able to do that from a medical standpoint within the next twenty-five or forty years.

It is coming. We know it is coming. Our problem is advancing the age of our people by teaching men, women and children the art of

keeping well. There are thousands of deaths annually, which, with reasonable precaution, could be prevented. This means that society is not availing itself of the medical knowledge already at its disposal. Of the 3,000,000 people on the nation's sick list every day, one-fourth to one-third are needlessly so.

To combat this unnecessary suffering and waste of human resources, to induce better health and longer lives, a campaign of health education such as is now being undertaken by the Gorgas Memorial Institute is of the highest value.

An important phase of the work is the periodic health examination or health audit, the only known way of discovering certain incipient diseases before the individual realizes anything is wrong. In the beginning, Bright's disease, apoplexy, and high blood pressure are usually symptomless to their victim. But discovered in time by the health audit, the advice of the family doctor followed out, you are put on the road to recovery before your vital organs are wrecked beyond repair. Take as good care of your health as you would of your automobile and have your vital structures tested yearly to locate the enemy of your health.

A second vital function, which is truly preventive medicine, is teaching the individual the ill effects of wrong habits of living, which if continued, will lead to illness. Improper eating, and getting insufficient exercise each day are among them.

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A journal for the promotion and diffusion of usable medical knowledge.

The Tenth District Medical Society and Its Setting

The Councilor for the District narrates something of the evolution of this Society. Since the reorganization of the American Medical Association, about twenty years ago, the district societies have been growing in popularity and influence. They have justified themselves many times over by their service in bringing into more harmonious relations the doctors of neighboring counties. These learned to know each other; misunderstanding gave place to mutual regard, and a spirit of helpful cooperation was engendered.

In the Tenth District Dr. Glenn promoted and built on this spirit; Dr. Hunicutt grasped the torch from his falling hand, and, with his co-adjutors, has brought the Society to the place where it can conceive, and confidently undertake, so ambitious a plan as that outlined by Dr. Richardson in another section of this issue.

In his first editorial utterance, in December last, the writer called attention to the content of doctors of the South to quote those of other sections. This humiliating state of affairs will give way to one far more satisfying when we use means such as suggested by Dr. Rich-

ardson for improving, and learning to appreciate ourselves.

The Tenth District is peculiarly fortunate in that an unusually large proportion of its medical men have had exceptional training. This is accounted for, to a great extent, by the coming in of many seeking restoration to health. The contributions to the real progress of the world by the tuberculous has been so enormous as to cause an eminent medical authority to express the opinion that it would be to the immense advantage of the race if every one were to have the disease to some degree.

Another large factor is the excellent start made when Asheville was a mere village. Then a majority of its practitioners had availed themselves of hospital internships and the advantages of study in European clinics. From such a start, and with such doctors as exemplars, constantly before the young men of the section who had ambitions in medicine, it was inevitable that the Tenth District should find itself today possessed of a medical personnel exceptionally trained and able.

The reputation of the mountains of Carolina for healthfulness has caused the erection of many hospitals and sanatoria among them; the delightful climate, affording relief from the oppressive heat of summer, has brought thousands from the lowlands since *ante bellum* days. In recent years, clinics and hospitals for children have been established amid these favoring surroundings.

The tremendous material development now taking place in Western Carolina, and under such circumstances as to assure permanency, will supply an abundance of clinical material for illustrating the medical and surgical diseases of the years of rigorous manhood; at the same time increasing the incomes of the doctors of the region, and the taxes collected by cities and counties.

A feature of the very first importance is the possession of a thoroughly modern, well-equipped hospital, having an endowment which puts it beyond the exasperating cares which are the part of those who must make a general hos-

pital self-sustaining. The Mission Hospital has the potentialities of a great teaching institution of clinical medicine and surgery on its own, the year round; and of being a tower of strength in the District Post-graduate Course.

Thus, it will be seen, the stage is set for wonderful clinical teaching: Patients suffering with any acute or chronic disease of man, woman, or child; at least one hospital having a large income, independently of its earnings, and fully equipped for healing and teaching; a great general prosperity throughout the District; and a membership made up of medical men of unusual ability and training fired with enthusiasm;—all these factors combine to make a situation favorable, well-nigh without parallel, for the consummation of a great project.

Charge Them All.

Regular doctors of medicine are the only persons who do not charge for all services rendered. Before money was invented, when payments were made *in kind*, it was well enough for services to be exchanged; and in communities where, toward any enterprise for the common good, the farmer contributed his wheat, the carpenter and the mason his labor, and the hunter his venison and pelts, it was well enough for the medical man to donate his professional services.

But these conditions seem to have passed, with the exception of the application of the unfair feature of this principle to the doctor. The minister is paid in coin of the realm, and a salary, which, with perquisites, frequently amounts to a good deal more than the net income of the doctor who is serving the minister's family free, and without getting any credits on his monetary contribution to the church.

A good many years ago a distinguished citizen of Wilmington told the writer a story bearing on this subject in which the principal actor was the father of Woodrow Wilson. The Rev. Dr. Wilson had recently been called to the pastorate of the First Presbyterian church of Wil-

mington when he found it necessary to call in a physician. A few days after the first of the following month, encountering this physician on the street, the minister inquired as to why he had not received a statement. On receiving a reply to the effect that no charge was made, Dr. Wilson said, "I can not accept your services. I have been promised a salary of \$3,000, which I expect. Out of this I shall pay my expenses like any other man. If you will not accept payment, I shall be obliged to call another physician when in need of medical services." There spoke a man!

Serving the families of ministers gratuitously is, in the final analysis, donating those services to the congregation, which is usually on the average better off than the doctor. This can find no justification except in bearing out the truth of "To them that hath shall be given." In some instances the doctor is not as guileless as it would appear: he is attempting to curry favor in high places, and hoping to have passports to the homes of prominent parishioners. But this is a very short sighted policy. A respectable member of the legal profession will not accept a case for an inadequate fee just to keep a prospective client from going across the hall to another lawyer. He knows the other lawyer will deal fairly by him and refuse it also, and that one in need of legal services will then pay a fair price or do without. A railway agent will not accept half price for hauling a carload of cotton to Norfolk just because the company has to run a train anyway, and there is another railroad which runs to Norfolk. Business men have too much foresight to cut their own and each other's throats in any such way.

But many a doctor will treat patients amply able to pay, making no, or only half-hearted, efforts to collect, and often finally accept less than his just due on the ground that he must pay his office rent and keep his automobile anyway,

and that the patient would go elsewhere if he were not so tenderly handled.

Soon after graduation, the writer, while spending a summer at one of the Virginia springs, was given a bit of sage advice by the lady in charge of the linen. She could readily note youth and inexperience, so did not hesitate to advise. Said she: "My father was a doctor, who would not insist on his patients paying him just charges. They soon learned that he could be imposed on, and however low the charge would protest, knowing he would reduce it. That's why I am in this position. Let me advise you never to reduce a charge once you have made it. You may have to accept part payment, but let the balance stand."

The State of North Carolina has recently quintupled our License Tax. We should welcome it. Heretofore there has been some shadow of justification for expecting doctors to do some work for the community without compensation. Now there is none. The Associated Charities are supported by taxation and by voluntary contribution, in each of which the doctor bears his proportionate share. City, County and State Hospitals are kept going on the money from the pocket of the doctor, just as from that of the lawyer, the merchant, the manufacturer, the hod-carrier, the real estate agent and the banker. Why should the doctor donate his services to any of these charitable institutions? If the lawyer looks up a title; if the merchant sends out a bushel of meal or a ton of coal; if the manufacturer sells bed-clothing or stretchers; if the hod-carrier picks up a mortar-box; if the realtor drives past a proposed site, or the banker discounts a note,—he is paid well and in advance.

There is something in human nature which makes us set little value on anything which costs us nothing. For this reason, if for no other, services should be charged for. Of course one may grandiloquently quote passages about

the greatest things being obtainable, "without money and without price"; but the fact remains that the crowds usually gather before the ticket-office which vends at high prices. Dr. George Ben Johnston advised, "Of course charge your friends; your enemies will not employ you." Long observation and much thought inclines to the belief that this practice should be invariable, and that failure to do so is a mistaken kindness, which will usually result in ill for all parties concerned.

It is a singular fact that persons who would be highly indignant at the idea of receiving valuable gifts of any other kind, very complacently accept the services of the doctor. But that touches on the broad philosophy of the contradictory subject of human pride, so we will return to our subject, and make an end.

There is recorded in Judge Chas. E. Flandrau's *History of Minnesota*, a story which the author says illustrates "the fundamental principle which underlies the practice of law—that of always charging for services performed." The story is that Mr. Henry M. Rice (afterward Governor of Minnesota) presented to Mr. William D. Phillips a lot in Saint Paul on which to build a law office, and that, "when he presented his next bill to Mr. Rice there was in it a charge of four dollars for drawing the deed."

In such an instance as the foregoing, it would probably be well to allow the gift to offset the service; but where there is no gift we should cease to recklessly squander our time in serving states, counties, municipalities or individuals, without receiving money, thanks or respect. We can then have time to devote to those who pay us in all three of these commodities, and, in addition, save ourselves the deep humiliation of having patients whom we have served well and *gratis*, notify the public of their low estimate of our abilities, by deserting us for strangers whom they *pay*.

The Best Sort of Book

Among the books reviewed for this month's issue is Dr. Frank Howard Richardson's, "Simplifying Motherhood." It is a volume of the gratifying class which is both simple and scientific.

With the general tendency to extol the "practical" and the "simple" the editor has little sympathy. Usually those doing the extolling are on a mental level with the individual who wants to know if another has not "swallowed a dictionary," if he happen to use a word of more than two syllables.

But when an important subject can be treated of in a manner which renders it easier to understand and to carry around in the mind, and, at the same time, more useful to all persons concerned, such a treatment should be welcomed with open arms.

Much is written about the child being "the most important thing in the world." This is a part of the gushing, unthinking outpouring of sentimentalists who have set themselves up as teachers. *The mother is far and away the most important creature in existence.* It is to be hoped that there is not a doctor in the whole world, who, confronted by the necessity of sacrificing the life of mother or child, would hesitate for a moment in deciding in favor of the mother. The only exceptions to this rule have been in cases where the selfishness of man has made him willing to sacrifice woman in order that an heir to his throne might be born; and even such stories are not very well authenticated.

It is related that even that synonym for selfishness, Napoleon the First, after having divorced Josephine in order that there might be born an heir to his empire, told the obstetrician in attend-

ance on Maria Louisa to "proceed as though she were the wife of a peasant;" in other words, although to this very end he had divorced his lovely and devoted first choice, he was not monster enough to want his wife's life placed in jeopardy for the attainment of this end.

But this is wandering somewhat afiel. Dr. Richardson's book is not Mother vs. Child; rather it is written in the interests of both, and it has the potentialities for serving those interests well.

Another Department

With this issue Dr. Elliott institutes the Department of Dermatology. The profession in general has perhaps as little knowledge of diseases of the skin as of those of any organ of the body; which would seem strange in view of the ready accessibility of this part to examination.

This department will be conducted, as are all the others, in such a way as, so far as we can anticipate, will render the most service. Greatest stress will be placed on disease conditions which every one must treat. There will be shown no spirit to advise the man in general practice to consider himself a clearing-house for diseases, and to refer himself out of a job. Rather will latest information be given in the diagnosis of skin lesions; the distinguishing between those which have potentialities for great evil, and those which are comparatively innocent and tend to cure of themselves; and the treatment advised from the viewpoint of the attainable as well as the ideal.

The Journal is fortunate in obtaining the services of Dr. Elliott for its readers and commends his suggestions in advance.

DEPARTMENTS

RADIOLOGY

JOHN D. MACRAE, M.D., *Editor*
Asheville

X-Ray Studies of Gastro-Intestinal Tract: Chronic Appendicitis

A fair proportion of patients with gastric symptoms are free of gastric lesions but owe their digestive disturbance to chronic appendicitis, stasis in the appendix or to adhesive bands about the ileo-cecal junction which are secondary to appendicitis.

For obvious reasons x-rays are not used to study acute appendicitis. I have, however, noted on fluoroscopic examination that the right diaphragm is rigid and does not move in respiration when there is acute inflammation in the right lower quadrant. This rigidity is of the same nature and significance as that in the right rectus muscle in similar conditions.

Chronic appendicitis produces certain definite signs in the fluoroscopic and radiographic study.

The examination of the appendix is a part of a complete gastro-intestinal study. It is accomplished by giving a meal of barium sulphate suspended in malted milk or buttermilk. Immediately after giving this opaque material the gullet, stomach and first part of duodenum are studied. From the 6th hour onward the evidences of appendix trouble begin to be recognized. The study should be made with films and by fluoroscopic observation. The fluoroscopic study is to be made with patient in the horizontal position so that palpation can be thoroughly done and the patient may be turned about in any desired position.

Normally the appendix is observed to fill and empty as the cecum does after a barium suspension has been given. Ordinarily the cecum is well filled with the opaque material twelve hours and twenty-four hours after the ingestion

of the test meal. Palpation of the patient's abdomen in the horizontal position at these hours, during fluoroscopy, will demonstrate the appendix filled and freely movable. Also the cecum is recognized as full and freely movable from its resting place in the right iliac fossa and there is no tenderness.

Deviation from this state will indicate the presence of past or present inflammation in or near the appendix.

Stasis in the terminal ileum at the twenty-fourth hour means partial obstruction at the ileo-cecal junction which generally results from inflammatory deposits secondary to appendicitis. These deposits produce more or less extensive adhesions.

Fixation of the cecum in the right iliac fossa is abnormal and is commonly caused by the same processes that cause ileal stasis.

The appendix may not fill as a result of inflammatory agglutination. If this condition exists and there is tenderness in this region, especially with cecal fixation or ileal stasis, the indications are strongly suggestive that chronic appendicitis exists.

When the cecum empties, leaving the appendix full for some time afterwards, we may reasonably conclude that it is pathological. Some past process has left it constricted at its base. An appendix full and unable to empty itself by its normal peristaltic movements can and often does produce local pain or reflex gastric disturbances.

Summing up: Appendicitis which has become chronic leaves products of inflammation which cause definite x-ray signs; recognized as adhesions about the appendix and cecum, ileal stasis, fixation of cecum and appendix, obliteration of the lumen of the appendix, kinks and deformities in the appendix with tenderness.

This examination must not be made in a perfunctory manner and the find-

ings must be co-related with history and clinical findings. Otherwise it may be assumed that the appendix is responsible for symptoms which it does not cause.

GYNECOLOGY AND OBSTETRICS

ROBT. E. SEIBELS, M.D., *Editor*
Columbia

Carbohydrates in Pernicious Vomiting

Assuming that a tissue deficiency in carbohydrates is the basis of the vomiting and of the necrosis in the liver in severe cases, many obstetricians are attempting to relieve this serious complication by increasing the carbohydrate intake.

Titus reports favorable results in a series of 328 cases where high carbohydrate feedings and intravenous glucose were given. His method is based on the use of from 50 to 75 gms. of glucose as the dose for the adult of average size, and he administers it in a 25 per cent solution. This amount is given in a single dose, say 75 gms. in 300 c.c. of distilled water, and a few hours later 50 gms. in 200 c.c. of water. The dose may be repeated one to three times a day, depending on the condition and the response of the patient. The chemically pure—not the commercial—glucose is to be used and in a clear solution in which no caramelization has taken place.

Thalhimer uses 100 gms. of glucose dissolved in as much water as the dehydrated condition of the patient indicates (1 to 2 liters) and the hypodermic use of one unit of insulin for each 3 gms. of glucose. By means of a special apparatus the administration is carried on slowly, taking from 3 to 4 hours for the injection. The majority of his patients have ceased from vomiting in 6 to 8 hours and the urine has promptly cleared of acetone bodies.

Paddock advocates the feeding of these patients through the duodenal tube in addition to the use of intravenous glucose, being thus able to give milk cream and eggs.

Titus, Paul: J.A.M.A., Aug. 15, 1925. LXXX, 488.

Thalhimer, W.: Am. J. Obs. & Gyn., May, 1925. IX, 673.

The Value of the Sedimentation Test

This test is a study of the length of time it takes the red cells to settle out of citrated blood plasma. The technic used is the Linzenmaier-Freidlander.

Hard glass tubes, 5mm. in diameter, 6.5 cm. in length and with a capacity of more than 1 c.c., are marked at the 1 c.c. level and at 6, 12, 18, and 24 mm. below this mark. 0.2 c.c. of a freshly prepared 5 per cent solution of sodium citrate in a Luer syringe is mixed with 0.8 c.c. of blood drawn from a superficial vein. After shaking well, the mixture is placed in a sedimentation tube and allowed to stand at room temperature. The time is noted when the mixture is tubed and again when the line of demarcation between the erythrocytes and the plasma reaches the 18 mm. mark.

In 100 cases studied, (making 193 tests) the variations in the sedimentation time seemed to fall within fairly constant limits. In 10 cases, free from demonstrable infection, the variation was from 130 to 224 minutes, giving an average sedimentation time of 185 minutes. With the increase in activity of pelvic pathology the rate decreased correspondingly. In uncomplicated myoma, the rate averaged 153 minutes; in ovarian cysts, 112 minutes; in chronic salpingitis, 91 minutes; in subacute salpingitis, 53 minutes; and acute salpingitis, 28 minutes. In puerperal infections the rate varied from 4 to 18 minutes.

Those cases with a sedimentation under 45 minutes which were operated upon, regularly had a stormy convalescence and the test therefore, seems to be of value in determining when to operate in the presence of infection. It further has a value in the prognosis of acute infections, as the rate rose or fell before any change occurred in the temperature and leucocyte curves.

Baer and Reis: Am. J. Obs. & Gyn., Sept., 1925, X, 397.

MENTAL AND NERVOUS

JAMES K. HALL, M.D., *Editor*
Richmond

Why Not?

"Whenever a person is indicted by a grand jury for a capital offense or whenever a person, who is known to have been indicted for any other offense more than once or to have been previously convicted of a felony, is indicted by a grand jury or bound over for trial in the Superior Court, the clerk of the court in which the indictment is returned, or the clerk of the district court or the trial justice, as the case may be, shall give notice to the department of mental disease, and the department shall cause such persons to be examined with a view to determine his mental condition and the existence of any mental disease or defect which would affect his criminal responsibility. The department shall file a report of its investigation with the clerk of the court in which the trial is to be held, and the report shall be accessible to the court, the district attorney, and to the attorney for the accused, and shall be admissible as evidence of the mental condition of the accused."

The quotation above is one of the laws enacted in the State of Massachusetts. The presumption is that in that state the plea of insanity has been made use of in defense of a prisoner. Such a defense is not new. The opinion was hastily expressed by a judicial officer that Saint Paul was mentally abnormal, and the statement was made in the presence of the great Apostle. He denied the charge. Thought of unsound mentality as a complicating factor in criminality is finding more frequent expression in the court room, in the press, in medical literature, and in law-making bodies. It has become possible, apparently, to free an individual from the legal consequences of murder simply by constant iteration and reiteration by counsel before the jury that the prisoner was insane at the time of the commis-

sion of the so-called crime. Such statement by counsel to a jury need not be fortified by medical opinion to make it effective. A jury will not convict an insane man; nay, more, a jury will not convict a prisoner who may be insane. Should the jury be condemned for playing safe? The average man could not comfortably sleep with a conscience constantly whispering to him in the still watches of the night that his vote had helped to send a crazy man to the electric chair.

The Massachusetts law does not assert, though it may imply, that abnormal mentality plays a part in the causation of crime. The law makes mandatory; a medical examination of every individual indicted by a grand jury for a capital offense; every individual charged with any crime whatsoever who has been previously convicted of a felony and every person twice before convicted of the same offense. The act makes necessary, therefore, the medical investigation of all persons charged with capital crimes, felonies, and those who have become repeaters in prison. Before such a person can be tried for a crime his mental responsibility will have been established. The report of the medical examination is filed where it becomes accessible to the court and to the prosecution and to the accused. The assumption is that if the prisoner is found by the medical examiners to be irresponsible he is dealt with accordingly; if found to be sane and responsible he stands trial. The law is sensible; it is rational; it is just to the prisoner and to society. There can be no valid objection to such a procedure. Such a medical commission should be a part of the judicial machinery of each state, a sort of medical supreme bench, competent to carry out an unbiased medical investigation, and legally authorized to speak the concluding word. What a dignified and worthy purpose such a department of mental disease could have served in recent months in the State of North Carolina!

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*
Charlotte

The Oral Surgeon.

Philadelphia occupies an enviable position as a medical, surgical and dental center. From colonial days down to our own time, in this country, Philadelphia was the Rome to which all medical roads ran. There practiced Gross, who might be called the father of American surgery, Garretson, who did so much pioneer work in surgery of the mouth, and Cryer, who took up and extended this work.

There was instituted the first formal course in oral surgery. Through this avenue it was hoped that the medical and dental professions could be brought into closed relations, and the failure of the medical authorities to accept this offer, as in the case of the refusal of the University of Maryland to establish a School of Dentistry, indefinitely delayed the proper cooperation between these two branches of the healing art.

Ivy defines oral surgery as, "Surgery of the mouth and jaw bones and of complications arising in adjacent structures from injury or disease of these parts." It is deplorable that there is so general ignorance of surgical pathology of the mouth that many call all periapical diseases "abscess," and every bone infection "necrosis." The oral surgeon should be competent to take care of all surgical disease of this area, major as well as minor.

It is significant that practically every addition to the knowledge of surgery of these parts has come from dentists. Even when the contributor possessed the M.D. degree, he was in the practice of dentistry. The taking of the two degrees is looked upon as economically impracticable.

Special training is necessary for the attainment of proficiency in the surgery of these parts, as of any other part. The present attitude of the American Medical Association is given approbation. The question whether or not oral

surgery has justified itself by its results is answered in the affirmative. Its work in the world war was eminently useful; it might be said, well-nigh indispensable.

Those who intend to practice oral surgery are advised that it is necessary that the heart, head and hand be trained; and that resourcefulness, self-reliance and good judgment are essential.

—From a paper by Guy R. Harrison, D.D.S., Richmond, the Dental Cosmos, May, 1925.

LABORATORIES

HARVEY P. BARRET, M.D., *Editor*
Charlotte

Neutral Red as a Test For Gastric Secretion.

An accurate quantitative test to measure the functional activity of any of the body organs is a very desirable aid in clinical diagnosis. We now have such a test for kidney function. Much work has been done on the subject of liver function, especially in regard to dye elimination. It seems that it is only a matter of a short time until such a quantitative liver test will be made available.

An effort has been made to quantitatively measure the function of the stomach. The most favorable dye for this test so far has been neutral red injected intravenously. Various investigators have tested the ability of the stomach to excrete anilin dyes. Of the dyes tested, only neutral red was found to be excreted by the mucous membrane of the stomach when injected intramuscularly or intravenously.

In an article published in the American Journal of the Medical Sciences, September, 1925, Piersol, Bockus and Bank give the results of this test applied to a number of patients with various gastric conditions. Their technic is as follows: "The patient reported after a twelve hour fast. An ordinary gastro-duodenal tube was passed into the stomach and the residuum withdrawn. Four cubic centimeters of a one per cent solution of neutral red (40 mg.) were injected intramuscularly into the

gluteal region. Water was given by mouth and a steady drip established from the duodenal tube. The first pink color in the gastric contents thus obtained, was recorded as the appearance time of the dye."

These workers found that only a small proportion of the dye injected is eliminated by the stomach; the greater part being eliminated by the kidneys, liver and small intestines. In order to obtain a larger quantity of dye for quantitative estimation the technic of injection was modified. The dye was given intravenously and in doses of 125 mgms. Otherwise the technic was the same. After trying this method on normal, hyperacid and hypoacid cases, these three authors concluded that this test can not be relied on alone as a means of quantitatively estimating gastric function but that it is of value as a test to be used in the diagnosis of achylia gastrica. "We believe that the ordinary gastric analysis cannot be relied upon in diagnosing this condition." It would seem that this test is a valuable aid in investigating cases of true and false achylia. It will be especially valuable in the differential diagnosis of pernicious anemia and allied conditions as it has been stated by a number of workers that only in pernicious anemia does true achylia occur.

ORTHOPEDIC SURGERY

O. L. MILLER, M.D., *Editor*
Charlotte

The Calcareous Deposits of So-Called Calcifying Sub-Acromial Bursitis

The author quoted here gives a very comprehensive treatise on the subject of calcareous deposits beneath the acromion. He reports cases cured by surgical intervention, cases giving no painful symptoms and only seen inadvertently, and cases with symptoms being relieved by spontaneous absorption of the calcareous mass. Nineteen cases were operated on with relief, and this treatment is recommended. The writer states that:

Anyone attempting to familiarize himself with the literature dealing with these cases

should read the papers of Codman in which he describes subacromial bursitis as the most common cause of stiff and painful shoulders. Codman's contributions are classics in dealing with the mechanism of normal shoulder movements. Codman was the first to note the extrabursal position of these deposits. Many subsequent writers in describing single operative cases report the deposits as being in the bursa but it seems highly probable that the great majority of them did not make exact observations as to the actual position of the deposit in relation to the bursa. Their writings contain many other fallacies which still permeate recent literature notwithstanding Brackner's forcible efforts to overcome them in his two excellent papers in which he reports 18 operative cases.

The literature is confusing also because various writers use the terms "subdeltoid bursa" and "subacromial bursa" as though they were synonymous and interchangeable, whereas other writers believe these two terms represent two separate and distinct bursae. The descriptions contained in different books on anatomy are likewise variable and confusing. Surgical literature contains detailed histories of numerous cases quite similar to those I have encountered and it seems needless to give the individual records in each of mine. The clinical histories suggested a division of these patients into two main groups, (1) the acute and (2) the chronic.

The outstanding symptoms in the acute cases were pain and fixation of the shoulder joint. The maximum pain was located commonly at the outer side of the arm over the lower half of the deltoid muscle and only exceptionally at the site of the calcareous deposit just beneath the acromion. In many of the cases, especially in those of longer duration, the pain was referred from the neck all the way to the hand. In all of the acute cases pain was aggravated by active and passive motions of the shoulder, particularly in the direction of abduction and inward rotation. The pain was usually worse at night apparently due to the backward drag of the elbow. The patients could not lie on the affected side because direct pressure aggravated their pains. Many patients had learned they could obtain some relief at night by placing the arm on a pillow in a position of slight abduction. In the hyperacute cases the pain was as intense as that encountered in renal or biliary colic. In the non-operative cases there was a natural tendency for the hyperacute pain to ease up after a few days or within two weeks. On partial subsidence of the pain patients were prone to resume active use of the arm too early and pain recurred. In the acute cases the range of motion at the shoulder joint was greatly restricted by muscle spasm and pain. There was never complete fixation nor ankylosis of the joint. The shoulder was least restricted in backward and forward swinging motions at the side of the body. Inward rotation was restricted in all acute cases as evidenced by an

inability to place the hand behind the back. The patients were unable to comb the back hair and could not fasten suspender or rear skirt buttons. The men could not introduce the hand into the hip pocket. External rotation usually was fairly free but was restricted and painful in several.

The chronic type of cases either began as such or were originally of the acute type. Pain, both as to localization and radiation, was similar to the acute cases but varied greatly in intensity in the individual patients. In different patients the pain was constant, intermittent or remittent over a period of weeks, months, or years. Mild exacerbations of pain, lasting from several days to a few weeks, were frequent either as the result of exercise or without obvious cause. Several patients had very acute exacerbations in which the pain was as viciously severe as in the acute type of cases. In the milder cases and during remissions in the severer cases pain was felt only during extreme inward rotation or abduction to or above the shoulder level. Limitations of motion were more marked during exacerbations of pain due to the pain and muscle spasm. Maintenance of the arm in its restricted position in long standing cases led to contractures of the shoulder muscles and to atrophy which was most evident in the deltoid, supraspinatus, and infraspinatus muscles. In a few of these patients the chief complaint was disability rather than pain. In many chronic cases the condition apparently ran a self-limiting course and irrespective of treatment the patient made a complete recovery at varying periods from a few months up to three years. In a very small percentage of cases the condition persisted over a longer period of years (up to twenty years) and there were apt to be long periods of remission of symptoms.

With but one exception, in all cases, both operative and non-operative, acute and chronic, the patients who were suffering either from pain or limitation of shoulder motion had a characteristic area of localized tenderness just beneath the acromial process on the anterior or anterolateral aspect of the upper arm, usually over the site of the lesser tuberosity. The presence of a sharply localized finger-tip to quarter-dollar sized area of tenderness was found to be a valuable sign in making a differential diagnosis from a general arthritis of the shoulder joint as in the latter condition the head of the humerus is tender to finger pressure throughout its entire circumference. In several patients with unilateral symptoms but with bilateral calcareous deposits tenderness was absent in the shoulder that was free from pain and stiffness.

The author's operative technique consisted of splitting the deltoid muscle in the line of its fibres and exposing the bursal area. The interesting observation is made that, contrary to current belief, the calcareous deposit is beneath the floor of the bursa instead of within the sac, and frequently is found in the sup-

raspinatus tendon where the tendon has been traumatized. Removing the gritty material and putting in drain for 24 hours relieves the acute pain. Practically all these patients had only a bandage sling to the wrist and rested the arm in a position of moderate abduction on a fat, long pillow which rested partly on the mattress and partly across the lower chest and abdomen. They were not restricted to this position but from the first day were encouraged but not obliged to remove the hand from the sling at intervals and extend the elbow. Beginning at the end of the second or third day they were obliged to begin passive motion in the direction of abduction by interlocking the fingers of the two hands and using the well arm to elevate the bad arm. Beginning on the third day or soon thereafter, the patient while sitting rested the arm on a table or on gradually increasing higher piles of books or pillows laid on the table and from time to time depressed the body to increase the range of abduction. About the fifth or sixth days efforts were begun to restore internal rotation by having the patient pass his sound hand across his back and grasp and make traction on the thumb or wrist of the affected side. Active exercises are encouraged from the first and insisted upon after the first few days. The exercises were started early to prevent adhesions and were preferably and usually carried out by the patients themselves.

At the time of operation on the chronic cases in which limitation of motion was at least in part due to contracted muscles, only moderate force was used in making shoulder manipulations to restore motion. Moderate force was frequently adequate to restore full motion but sometimes only an incomplete range of motion was obtained. In the chronic cases the patients were instructed to carry out the same postoperative exercises as in the acute cases. In the chronic cases, however, much less rapid progress was made because of the persistence of the original subacute pain. Baking, massage and vigorous passive motions had to be employed in many of these cases. In several chronic and a few acute cases massage and special exercises such as swinging Indian clubs and swimming had to be employed to overcome atrophy of the shoulder muscles even after motion was fairly complete.

Twenty-five shoulders have been seen in which calcareous deposits were definitely proved by x-ray examination but in which operation was not performed. Four of these patients had bilateral deposits but had the deposit removed from one side only. Two non-operative cases of bilateral deposits with unilateral symptoms have been seen.

In addition to the preceding cases of bilateral deposits in which there was spontaneous absorption of the deposit in the one shoulder of each case, four other unilateral non-operative cases have been seen in which there was a subsequent complete or almost complete disappearance of shadows in from four

months to two years. Until more convincing evidence is forthcoming, I will continue to believe that the generally accepted view that these deposits can make a miraculous disappearance within a very few days is really due to an x-ray fallacy.

All recent writers agree that injury to the tendon of the supraspinatus muscle is a definite etiological factor in the production of calcareous deposits, yet they all agree that a history of a definite single trauma is unobtainable in a considerable percentage of cases. According to the commonly accepted theory a partial rupture of the supraspinatus tendon is the injury which is usually responsible for the deposition of the lime salts. Localized tears in this tendon have been observed at operation and postmortem in the absence of deposits and they have also been found at operation at the site of the deposit. I believe that in a fairly high percentage of cases the deposition of the lime salts occurs quietly as the result of mild repeated traumata, and precedes, by days, weeks or months, the onset of the clinical symptoms. After the deposit has formed, a very mild trauma may then incite an acute inflammation with a rapid development of the classical clinical symptoms. Or a tendon weakened by a deposit may rupture from slight violence in which event the partial rupture is the result and not the cause of the deposit. The tendon of the supraspinatus is so situated that it is frequently subjected to single accidental violent trauma and to milder, many times repeated occupational pinches between the acromion and the head of the humerus in abduction. A partial rupture or a violent contusion either from pinching or from an external blow might directly destroy the scanty blood supply. Milder, frequently repeated traumata of the occupational variety might readily produce the same result indirectly by chronic inflammation. In many of the reported accidents it is impossible to determine whether the main factor in the injury is the muscular strain or the internal violence due to pinching of the tendon between the humeral tuberosity and the acromion process in the position of abduction.

Brickner points out that "the deposit occurs only in adults; it occasionally is encountered first in one shoulder, then in the other; in some persons the deposit undergoes absorption, in others it persists; although a common affection, many persons using their arms in the same way and subjected to the same influence, never develop it; it occurs among the muscular and athletic as well as the sedentary and asthenic; in females as well as in males; no other hypothesis can explain why in some persons, within a day or two after some mild internal violence or an external injury, the roentgenogram will reveal this characteristic deposition of lime salts above the greater tuberosity of the humerus. I might add that the symptomless development of deposits in the absence of acute trauma is further evidence in favor of metabolic disturbances. The patients in whom

these deposits occur are not of a gouty type. Infection and toxæmia are not factors. Cultures from the bursa and from the deposit were negative as were all the culture taken on several other patients. Many of my cases before the diagnosis had been made were treated for various forms of toxæmia without benefit to the shoulder.

On radiographic examination the calcareous deposits cast a shadow of varying density. The shadow may be thin and hazy or quite as dense as bone. Shadows of both extremes may exist in the same patient. The deposits may be single or multiple, and may be unilateral or bilateral. They vary in size from a pinhead to a silver quarter-dollar. They occupy different positions in relation to the head of the humerus in different patients. They often escape detection when a skiagram is made from only one angle because the deposit shadow is superimposed on the bone shadow of the humerus or the acromion. If stereoscopic pictures are not taken, at least two skiagrams should be made in every case. In one the arm should be held in inward rotation to the extent that the hand of the flexed elbow rests on the patient's chest. In the other the arm is rotated externally by flexing the elbow to a right angle and turning the hand as far away from the body as possible which usually means the back of the hand rests on the table on which the patient is lying.

It is very important for surgeons to realize that these deposits are not in the bursa but beneath it. One of my surgical acquaintances was unable to find the deposit in three of twelve operative cases shown by the x-ray because he limited his search to the bursa and did not explore beneath the bursal floor.

The treatment of cases of calcareous deposit will depend upon the stage at which patients apply for treatment. I no longer hold my former radical view that all cases of deposit should be operated upon. Accidentally discovered quiescent deposits do not require operation. If a deposit is causing acute agonizing pain its removal affords the most prompt and most certain method of relief and cure. The more prolonged or more severe the pain, or the more serious the shoulder crippling, the greater is the need for operation. Awaiting the spontaneous absorption of any given deposit is a very uncertain proposition. Even if it does disappear the symptoms may persist or recur for some months in lessening severity after the deposit has been absorbed.

The use of excessive force in manipulations of the shoulder or of any other joint is not justifiable. Excessive force means excessive inflammatory reaction and pain, and inability to carry out passive motion over such a long period that the contractures recur. The employment of excessive force in the shoulder may mean fracture of the humerus, dislocation of the shoulder or rupture of the axillary vein.

I have gained the impression in my non-operative cases that the distress in acute opera-

and the acute exacerbation of symptoms in chronic cases are due to an acute inflammation superadded to the chronic inflammation which originally caused the deposit. This acute inflammation with its increased blood supply results in absorption of the deposit irrespective of treatment or lack of treatment. Thus far I have observed absorption of a deposit only after moderately or viciously acute symptoms. Quiescent deposits have neither diminished nor enlarged while under observation. In the cases of calcareous deposits not operated upon, treatment should be directed toward safeguarding the patients from further trauma and keeping them comfortable pending spontaneous absorption.

Physiotherapy in its various forms may be helpful but if used injudiciously may cause marked aggravation of symptoms. Gentle massage combats the tendency to atrophy and may relieve pain but it should not be employed directly over the tender area. Heat in its various forms commonly ameliorates the pain. Many patients find that an electric pad applied to the shoulder at night is a sleep producer. Harris claims to have cured cases of calcareous deposit by diathermia. He apparently refers to symptomatic cures only as he did not follow up his cases by x-ray examinations to determine whether the deposits had been absorbed. I have tried diathermia but am not convinced that it or any other form of treatment has any specific effect in causing absorption of deposits.

Recurrence of a deposit is a reasonable possibility but thus far I know of no instance in which one has recurred after having been either absorbed or removed by operation.

—From a paper by John B. Carnett, M.D., Philadelphia, Surgery, Gynecology and Obstetrics. Vol. XLI, Oct., 1925.

SURGERY

A. E. BAKER, SR., M.D., *Editor*
Charleston

Colonic Cancer

Deaver states that the frequency of carcinoma in the rectum has often been called to our attention, but little has been said regarding the disease of the right colon. It appears that, in America, intestinal and peritoneal carcinoma, including rectal carcinoma, are increasing. In 1900 the death rate per 100,000 was 5.7, while in 1913 it had risen to 10.5. The difference cannot be attributed to errors in diagnosis. Of all carcinomata of the colon, excluding the rectum, 36 per cent occur in the sigmoid and 25 per cent in the cecum, the transverse colon, and the splenic flexure. Next in frequency of involvement are

the hepatic flexure, the ascending colon, and the descending colon.

Trauma is an important factor in the etiology of colonic carcinoma and the fact that the cecum acts as a reservoir may explain the greater frequency with which it is involved by carcinoma than the splenic flexure. Because of the difficulty of making an early diagnosis, these cases usually come to the surgeon late. The symptoms are not characteristic. The surgeon is often consulted first because of acute intestinal obstruction. Irregularity of fecal evacuations is a fairly constant sign. Diarrhea is more apt to be a constant sign than constipation. Constipation is present in cases of rectal and sigmoid cancers which have reached considerable size. A tumor may not be palpable unless the patient is thin or the disease is far advanced. Deaver warns against placing too much reliance on the x-ray examination.

As colonic cancer usually develops slowly, the surgeon has an opportunity to effect a cure if the diagnosis is made early enough. For ileocecal cancer Deaver favors the one-stage operation unless there is acute obstruction.

Peck reports his conclusions from a study of sixty-nine cases of cancer of the colon. He attributes the unfavorable results obtained at the present time to late diagnosis. When removal of the growth is possible, the results should be as good as those in cases of carcinoma in any other part of the body.

Frequently the first symptom is intermittent colicky attacks. If the abdomen is thin, a mass may be felt. Bleeding is common but occurs in small amounts, and only occult blood is found in the stools, except in advanced cases hemorrhage may be profuse. Great care is necessary in interpreting the x-ray findings. Digital examination of the rectum should never be omitted. The proctoscope and sigmoidoscope give invaluable assistance. Carcinoma of the colon is rather frequently accompanied by anemia. The two most common types—the round ulcer and the scirrhous contracting lesion—are described in detail, especially with regard to their

method of spread and growth. Mention is made also of the massive medullary type.

A study of the statistics given by Peck indicates that resection of the left colon has a higher mortality than resection of the right colon. The difference is due to the higher infective potency of the contents of the left colon and the greater difficulty of obtaining healing without leakage in suture of left colon. Resection of the right colon, when done in a one-stage operation with immediate suture, is a relatively safe procedure.

Peck draws the following conclusions:

1. Cancer of the colon, excluding the rectum, offers a relatively high rate of operability and a percentage of radical cures which compare favorably with those of malignant disease in other organs.

2. Growths of the cecum and the right colon, including the right part of the transverse colon, are suitable for a one-stage resection with immediate anastomosis by suture. The operative mortality should be relatively low.

3. Growths in the left colon are more safely resected by the two-stage Mikulicz method.

Since there are numerous records of the association of cancer with polyposis, the question of the proper treatment of the latter is vital.

The author concludes with the following statement:

"In a practical sense we must recognize that cancer of the colon may occur as multiple primary lesions; that an entirely similar picture may be produced by tumors which develop secondarily; and that polyposis of the colon has a very definite tendency to malignant degeneration."

Rankin, writing on "The Choice of Operation in Cancer of the Colon, not Including the Rectum" states that the right division of the colon as far as the middle of the transverse segment is usually best removed in one stage. Its anatomical relationships permit a satisfactory mobilization. Its removal is followed by recurrence of the malignancy less frequently than in cases of cancer in other parts of the colon. Care

should be taken to avoid injury to the retroperitoneal duodenum when the upper angle of the right colon is mobilized.

After the removal of the segment the continuity of the intestine may be restored by open end-to-end or end-to-side anastomosis between the ileum and colon. The Parker-Kerr technique of aseptic anastomosis is an ideal method.

Removal of the middle third of the colon, despite the ease of mobilization of this segment, is associated with high mortality if the resection and anastomosis are done in one stage. As an emergency operation, the growth may be removed in one stage between clamps and the clamps left in place. The Mikulicz operation has a mortality of 9.6 per cent and offers no opportunity for gland dissection. In cases subjected to the Mikulicz procedure the immediate mortality and the incidence of recurrence in the bowel itself and in the abdominal wall are greater than in the cases which are treated by a graded operation. Graded operations give better end-results because of their more radical technique.

Graded operations have a lower immediate mortality and offer a good chance for cure also in cases of cancer in the distal two-thirds of the colon. A reduction of 5 per cent in the operative mortality is of itself an unquestioned advantage, and since this type of procedure allows a more radical secondary operation, there is reason for optimism with regard to its end-results.

—Abst. of Paper by Deaver & Peck. *Ann. Surg.*, 1924.

EAR, EYE, NOSE AND THROAT

C. N. PEELE, M.D., *Editor*
Charlotte

Headaches in Children.

Headache is only a symptom and never a diagnosis. Headache is perhaps the most common symptom in all the range of the practice of medicine. Even the laity often speak of eye headache, stomach headache, constipation headache, etc.

In this short discussion of headaches, I wish to state that the causes of headaches are much the same in children as

those in adults. When children are brought to us complaining of headaches, we should inquire into their modes of living, the ventilation of sleeping rooms and school rooms, their diet and digestion, and the amount of exercise each day. The regulation of these may relieve the child of much suffering. From the specialist standpoint, headaches may be caused by eye strain, disease of the eye, infection in the paranasal sinuses, or diseased tonsils and adenoids.

On entering school, the child begins a new period in life, and as it progresses in its studies from year to year, more continuous use of the eyes is required and this may cause pain in or around the eyes. This pain may be caused by some ocular condition. It may be disease of the eyes or some defect of the muscular mechanism which gives "eye strain." Eye strain is by far the most common cause of headache. The muscular mechanisms which may be strained are two. First, the focusing muscles which give a clear image on the retina; and, second, those muscles which fix the eyes on the object to be looked at. Proper attention to these different parts of the visual apparatus will enable us to discover the cause of a great many headaches and thereby relieve them.

Headache in children caused by infection in the paranasal sinuses is rather infrequent, though it does occur. The diagnosis of infection of the sinuses, either acute or chronic, can usually be made from the history, and definitely established by means of the different methods of examination, intranasal inspection, endoscopy, transillumination, and x-ray.

Enlarged and diseased tonsils and adenoids may cause headaches in children though this is unusual. Every child who suffers with headaches should have a careful examination of Waldeyer's ring to ascertain whether there are poisons passing into the general system, either through the lymphatics or through blood capillaries. Children not infrequently lay aside their glasses after having diseased tonsils and adenoids removed.

PEDIATRICS

FRANK HOWARD RICHARDSON, M.D., *Editor*
Brooklyn, N. Y. and Black Mountain, N. C.

The Problem of Nourishing the Child.

The problem of the child is very similar to the problem of the bank account,—a problem that comes very close home to every one of us. In the latter instance, we are constantly being subjected to a balancing or "totting up" process, the result being shown in the "daily balance." If we have put in, in some form of currency or other, more than we have drawn out, we are financially solvent,—though at times with a sadly slim margin. If the draughts that we have made, or attempted to make, exceed the deposits, we are peremptorily informed by the bookkeeper that something must be done, and done quickly. If we cover the overdraft by some form of currency or credit acceptable to the bank,—well and good; if not, we are closed out, as undesirable clients.

The case of the child is strikingly analogous. He starts out with a goodly initial deposit to his credit, in the form of physical, mental, and emotional resources, inherited from his forebears, enough to carry him through life very creditably, given a reasonably sensible husbanding of his resources. He may even make pretty reckless expenditures without exceeding the limits of safety; for he has means of replenishing his resources by deposits of rest, sleep, and food, not to mention other negotiable securities of various sorts, such as educational and emotional resources.

Unfortunately, we frequently overdraw our physical accounts in childhood, just as the spendthrift makes too great a draught upon his financial assets. The result is the same in both cases—a warning notice of trouble ahead. It is surprising how extensible are the apparent limits of the child's physical endurance; but, unfortunately, this elasticity is far more apparent than real. Old Dame Nature is a remarkably shrewd accountant; and she will exact a very accurate accounting when she balances her books, even though she

seems indulgent to the point of culpable laxness in the matter of her daily balance sheet.

What do we do when the bookkeeper of the bank tells us we have overdrawn our account? We have two possible courses open to us. The first is the immediate response. We cut down some of our expenditures—or insist that the spending member of the joint account cut down her share of the disbursements! The other course open to us is harder to pursue, and is frequently no more efficacious. It consists in increasing our deposits by the more or less simple means of earning more and putting more into the bank.

Faced with this problem in the case of the overtaxed child who has drawn out more than he has put into the physical repository, we have similar alternatives,—namely, to draw out less, or to put in more.

"Putting in more" is another way of stating the problem of nutrition, which has been considered the keynote of the whole question of pediatrics, which comes from the two Greek words,—*pais*, child, and *atreio*, to train, or educate, or manage. This column has been insistent in season and out, in urging the importance inhering in the proper nourishment of the child,—understanding proper rest, sleep, and recreation as well as adequate alimentation, by the term "nourishment"; and will probably continue from time to time to dwell upon various phases of the subject.

There is, however, another way in which we can maintain the child's physical solvency. We can cut down on his expenditures. How is this possible? The ways are legion. Our first step must be to make an inventory,—not of assets, but of expenses. Here we may itemize first school strain, next come extra curricular activities, such as music lessons, dancing classes, religious schools (Jewish or Talmud day schools, for instance, Catholic and other sects' instruction classes in preparation for confirmation, etc.); outside language classes; drilling for Sunday school entertainments and school festivals; and similar intellectual exercises outside the

class-room. Many of these gain added potency by their accompaniment of late hours. Competing with these for importance comes the strain of unsatisfactory home and family life—fraternal jealousies, unfair, unintelligent or otherwise unsatisfactory disciplinary efforts, over-stimulation in attempting to keep up with elders in competitions unsuited to the capabilities of the child. Frequently unconsidered, but terribly potent, come unsatisfactory sexual situations,—shockingly common in children, if we could but free ourselves of our own inhibitions sufficiently to be on the lookout for them, and to recognize their manifestations. We should remember that the damning complex, the all-too-common inferiority reaction, can be traced universally to the early years. Emotional errors and strains are among the commonest, as well as costliest, forms of childhood overdraught. Physical expenditures may be due to indigestion from dietary indiscretions; or to physical defects, many of which are readily and easily removable.

It is an old medical truism that the best way to cure a disease is to remove its cause. A recapitulation of the causes enumerated in the preceding paragraph is quite unnecessary; but the searching out and finding of the causative factors there named, or some other that is active, may be essential to a cure.

Stopping leaks is good sense, as well as good medicine. Increase our deposits,—yes, by all means. But while we are doing this, let us search out the constant sapping away of vital resources which is taking place in these little lives,—before, by our laxness or our willful blindness, we allow them to become hopelessly insolvent.

DERMATOLOGY

JOSEPH A. ELLIOTT, M.D., *Editor*

Acne Vulgaris.

Acne vulgaris is one of the most common skin diseases that the practitioner is called on to treat. The disease is common in both sexes and occurs usually at or about the age of puberty.

Due to the fact that lesions most often appear on the face the patient frequently consults the physician for cosmetic reasons. The mild superficial lesions may not seem to warrant careful attention and frequently the patient is dismissed with casual hygienic advice and a remedy to be applied locally. The indurated pustular lesions, however, may be quite disfiguring, and often result in deep permanent scars. It is well, therefore, to attempt to abort the latter type of lesion by proper attention to the early cases.

Can acne be treated successfully? MacKee states that, when properly treated, the percentage of cures is close to 99 per cent. Only 5 to 6 per cent of the cases relapse where proper precautions are taken. In order to obtain good results it is necessary to give the patient systemic as well as local treatment. Focal infections should be sought for and removed. Constipation should receive careful attention. The diet should be regulated. Fried foods, rich foods, pastries, cocoa, soda water, candy and gravies should be eliminated from the dietary. If there is any evidence of rosacea, tea and coffee should be interdicted. General tonic measures should be administered to anemic or undernourished patients.

Vaccines have been extensively used in the treatment of acne with some apparent success. The writer is inclined to believe that such success as has been attributed to vaccine therapy could well be attributed to the local and supporting measures used in these cases. Fox has reported the results obtained with vaccines by 71 members of the American Dermatological Association. A very large percentage had not obtained satisfactory results and had discarded this method of treatment altogether.

Many acne cases can be cleared up with proper systemic and local treatment. The local treatment consists of removing the comedones, evacuating the larger pustules, and employing local stimulating remedies. The remedies most frequently employed are sulphur ointments, lotio alba and resorcin lotions.

X-rays have proven to be the greatest aid in the treatment of acne and produce a cure in about half the time required for other treatment. If properly employed and combined with general measures, x-rays offer a method that gives a safe and permanent cure. In order to properly employ x-ray therapy one must have his machine standardized so that he will know accurately the dose that will produce a mild erythema or skin unit. With this knowledge one may proceed by giving 1-4 of a skin unit (MacKee's method) once a week in the average case. In our experience twelve treatments are usually sufficient. Stubborn cases may require more, while some cases respond to fewer treatments. Young females with fine textured, highly colored skin will not tolerate this dosage. In these cases it is essential to reduce the dose.

In order to avoid injury to the skin the operator should watch carefully for an erythema or wrinkling of the skin. The slightest evidence of either calls for immediate interruption of treatment. The erythema may be followed by telangiectasia, and the wrinkling is frequently permanent. As a further safeguard MacKee advises against stimulating local remedies while x-rays are being given. Pigmentation is not a serious sequel and usually disappears within a few months.

NEWS ITEMS

Meeting Ninth District Society.

More than a hundred doctors from the eleven counties from Davidson to the Tennessee line met in Lexington on Oct. 29th, for the annual meeting of the Ninth District Medical Society, heard a number of papers by prominent physicians, listened to special addresses and elected officers.

Dr. J. R. Terry, of Lexington, was elected president; Dr. Baxter Byerly, of Cooleemee, vice president, and Dr. James W. Davis, of Statesville, was re-elected secretary and treasurer.

Dr. Frank H. Richardson, of Brooklyn, N. Y., and Black Mountain, made an address on "Malnutrition in Children," with a number of local school teachers and members of the parent teacher association present to hear his talk. Correction of diet and the prevention of fatigue were the chief remedies advocated, Dr. Richardson declaring that children under 10 should not attend school five or six hours a day and that their extra activities during school session should be curtailed.

Papers on special subjects were read by Dr. J. A. Smith, Lexington; Dr. V. K. Hart, Statesville; Dr. H. H. Newman, Salisbury; Dr. Leo Parry, Charlotte, and Dr. R. F. Plyler, of Salisbury.

Dr. C. M. VanPoole, of Salisbury, gave the president's address and received the thanks of the society.

A resolution introduced by Dr. J. R. Terry, of Lexington, and passed unanimously, commended the state board of medical examiners for revoking the licenses of several physicians recently convicted of violating the Harrison narcotic law. Dr. L. A. Crowell, of Lincoln, a member of this board who was present, thanked the society for its support, and declared that the possession of large amounts of narcotics by any doctor was to be condemned. Dr. M. R. Adams, of Statesville, district counselor, declared that any doctor who would peddle narcotics for profit should be kicked out of the profession. His statement was vigorously applauded.

The meeting was held in the Sunday school building of the First Reformed church and the ladies of this church served a sumptuous dinner in the cafeteria of the building. Brief remarks were made by a number of visiting physicians, including Dr. O. L. Miller, Gastonia; Dr. J. L. Spruill, of Greensboro; Dr. J. P. Munroe and Dr. William Allan, of Charlotte; Dr. J. M. Northington, of the Journal of Southern Medicine and Surgery; Dr. Stanton, of High Point; Dr. Ravenal, of Greensboro and others.

Supt. J. H. Cowles, of the Lexington schools, J. R. McCrary, local attorney, and Dr. J. C. Leonard, pastor of the First Reformed church, also took part in the informal program.

The society voted to send greetings to Dr. T. E. Anderson, of Statesville, and Dr. I. W. Faison, of Charlotte, both of whom were ill.

The visiting doctors were welcomed in brief talks by Dr. J. E. Hobgood and Dr. C. A. Julian, for the county medical society, and Mayor J. A. Leonard, for the city.

Dr. William deB. MacNider, of the University of North Carolina, president of the North Carolina Medical Society, delivered the closing address at the afternoon session, discussing phases of diagnosis and treatment of Bright's disease.

Accredited By American College of Surgeons

Of the 49 hospitals in North Carolina surveyed by the American College of Surgeons this year, 29, or 59.2 per cent, are accredited, according to the announcement last week at the Philadelphia meeting of the College of Surgeons by Dr. Franklin H. Martin, the director general.

North Carolina hospitals appearing are Mercy General Hospital and Charlotte Sanatorium, Charlotte; City Memorial, Winston-Salem; Rex, Raleigh; St. Leo's, Greensboro; Watt's, Durham; Atlantic Coast Line Railroad, Rocky Mount; Biltmore, Biltmore; French

Broad, Asheville; High Point, High Point; Highsmith, Fayetteville; Lawrence, Winston-Salem; Lincoln, Lincoln; Long's Sanatorium, Statesville; Martin Memorial, Mt. Airy; North Carolina Baptist, Winston-Salem; North Carolina Orthopedic, Gastonia; Parkview, Rocky Mount; Rutherford, Rutherfordton; Salisbury, Salisbury; Bulluck, Wilmington; Cumberland General, Fayetteville; Moore-Herring, Wilson; Parrott Memorial, Kinston; Richard Baker, Hickory; Rocky Mount Sanatorium, Rocky Mount; Shelby, Shelby; Wesley Long, Greensboro; United States Veterans No. 60, Oteen.

The hospitals on the list fulfilled requirements for good service to patients through efficient staff organization, adequate diagnostic and therapeutic facilities, trained personnel, complete case records and periodic check-up or medical audit of the clinical work.

"This list of approved hospitals is of general interest. The patient can more intelligently and more safely choose a hospital and a doctor when ill. The young woman with the noble ambition to become a nurse is assisted in her selection of a training school. The recent medical graduate eager for more practical experience seeks the approved hospital for internship. Federal, state, municipal and philanthropic organizations frequently consult this list in their selection of institutions when rendering financial assistance. Already the American Railway association has urged its 14,000 surgeons to select for their patient, so far as possible hospitals approved by the American College of Surgeons. The United States army, navy, Veterans bureau, public health service and national homes for disabled volunteer soldiers share enthusiastically in this program and the approved hospitals of these groups appear on the list today."

Charlotte—Misses Grace Lawrence, Mary Oakley, Nancy Servis, Gladys Fogleman, Mary Bramley, Johnnie Turner, Annie Cox, Laura Cox, Mary Sivette, Eliza Leach, Beulah Mullis, Irene Strickland, Virginia Hartsell,

Mary Honeycutt, Helen Mundy, Edith Stowe, Irene Parsons.

Durham—Misses Nellie McKenzie, Dora Burchett, Elizabeth Jackson, Beatrice Freeman, Rosa Watkins, Mary Hardison, Carroll Neal, Matilda McClure, Ruby Smith, Hattie Smith, Martha Griffin, Ella Frederick, Josephine Bledsoe, Carolina McIlwain, Nannie Gibson.

Fayetteville—Misses Esther Bundy, Margaret Smith, Jannie Rollins, Lula Koonce, Winnie Gilbert, Sallie Poe, Lillie Poe, Catherine Jones, Sallie Covington.

Gastonia—Misses Pauline Shannon, Frances Bethune.

Goldsboro—Miss Mary Braxton.

Hickory—Miss Charlotte Epley.

Kinston—Miss Georgia Morse.

Burlington—Misses Emma Simpson, Elsa James, Verona Amick.

Biltmore—Misses Ruth Walker, Eula Hunter, Viva Rogers, Carrie Banks, Serepta Bowen.

Lumberton—Misses Bonnie Britt, Dora East, Opal High.

Morehead City—Miss Eugenia Willis.

Mount Airy—Misses Mary Brintle, Eva Banner, Dora Scott, Gipsy George.

New Bern—Misses Nora McDermon, Nancy Guthrie.

Oxford—Misses Alma Overlette, Mary Harris.

Raleigh—Misses Dora Mann, Ida Williams, Mattie Waddell, Katie Furr, Clida Woodall, Mary White, Annie Duke, Georgia Howie, Virginia Sells, Margaret Harrington, Clara Small, Anna Bradley, Edna Hayes, Helena Poindexter, Gertrude Lynder, Grace Wright, Effie Williams.

Rutherfordton—Misses Mary Hoey, Virginia Pollard.

Rocky Mount—Misses Helen Calhoun, Naomi Dillard, Nettie Barnhill, Katherine Bragg, Clara Fly.

Roanoke Rapids—Misses Emma Polk, Sara Clark, Addie Finch.

Statesville—Misses Margaret Hart, Nora Isenhour.

Salisbury—Misses Elenor Elliott, Ida Thorne, Lillian Boger.

Sanatorium—Miss Sadie Wagner.

Winston-Salem—Misses Lillian Bry-

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Wilmington—Misses Gladys Graham, Addie Jones, Mildred Tyndall, Ruth Walters, Tiffany Walker.

Wilson—Misses Bessie Barner, Pattie Overby.

Wadesboro—Misses Mary Thompson, Leila Smith, Lula Smith, Mary Thompson.

The following were from other states:

Alabama—Miss Annie Murphy.

Pennsylvania—Miss Mildred Beck.

South Carolina—Misses Mary Rourk, Mary Westbrook, Mary Blanks, Zula Sherer.

Georgia—Miss Elizabeth Howie.

Virginia—Misses Ruby Clark, Caroline Sykes, Minnie Joyce, Hazel Williams, Catherine Carmichael, Ann Harris, Mattie Sears.

Ohio—Misses Myrtle Robinson, Mary Ritchie.

The following were licensed without examination:

Florida—Misses Grace Blakeley, Pauline Hinson.

Georgia—Miss Verna Harvard.

Kansas—Miss Neta Jackson.

Missouri—Misses Clifford Harper, Salome Taylor.

Pennsylvania—Sister Seeber, Misses Pearl Frazier, Marjorie Elder, Ellen Mefflin.

New York—Misses Lula Whitesides, Adelaide Grimes, Alberta Weaver.

District of Columbia—Miss Myrtle Lloyd.

New Jersey—Miss Ellen McDonald.

Louisiana—Miss Rebecca Ohrt.

Michigan—Miss Etta Davis.

The Wake County Medical Society met with Dr. Albert Anderson, at Dix Hill on the twelfth, under the presidency of Dr. J. R. Hesler, Knightsdale. Very valuable features of the meeting were presentations of clinical cases, several forms of mental disease being illustrated by patients shown by members of the staff and a case of fracture of a cervical vertebra reduced by manipula-

tion with excellent recovery of function, presented by Dr. Hubert A. Royster.

By invitation from the Councilor for the District; Dr. V. K. Hicks, Dr. Jas. M. Northington, Charlotte, stated the policies and ambitions of the only medical journal published in the State, *Southern Medicine and Surgery*. Many of the members responded in happy vein and pledged their support and co-operation.

The Fourth District Medical Society held its quarterly meeting in Rocky Mount on November the tenth under the presidency of Dr. W. H. House, Goldsboro. Dr. W. J. B. Orr, Smithfield, discussed "Post-operative Urticaria." Other features of the program were, "Parathyroid Hormone and Tetany," Dr. S. P. Bass, Tarboro; an address by Dr. E. G. Moore, Elm City, and a general discussion of "Hypertension."

Dr. Jas. M. Northington, Charlotte, an invited guest, discussed the question of "Has a Medical Journal a Function in North Carolina?" In answer to this question the society replied in the affirmative and voted that it was the sense of the meeting that every member should subscribe for *Southern Medicine and Surgery* and co-operate in the making in North Carolina of the journal best meeting the needs of the whole profession of any State. Dr. C. T. Smith, Rocky Mount, was elected president for the coming year.

Dr. Archibald Alexander Barron and **Miss Alice Bright Kiser** were married on November the twelfth in the First Presbyterian Church, New York City. They will be at home after November the twenty-sixth at the Hotel Charlotte.

Dr. Edward J. Wannamaker and **Miss Mary Stuart Alexander** were married on November the fifth at the home of the bride's parents, Mr. and Mrs. John B. Alexander of Charlotte.

Dr. J. P. Matheson and **A. A. Barron** have returned from Vienna, where they have been for some months prosecuting special studies.

Dr. D. B. Mizell announces the opening of offices 501-503 Professional Building, Charlotte. Practice limited to treatment of Pyorrhea.

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NORTH CAROLINA

REVIEW OF RECENT BOOKS

William Crawford Gorgas His Life and Work, by Marie D. Gorgas and Burton J. Hendricks. Pages 359. Published by Doubleday, Page and Company, Garden City, New York, 1924.

Here is a cheering account of the fight of a brave and resourceful man against poverty in early days; against mosquitoes and marshes in succeeding days; against military ignorance and bureaucratic boneheadedness in later days; against German militarism in the days of his snow-white hair; against the approach of death in a London hospital in the last days; to Death only was there surrender. Over other adversaries, human and insect, he was victorious. When Death came to Gorgas his work had been done, and he was perhaps not rebellious about going on the final journey. For many years he had been a traveler, and always an adventurer, and one can imagine easily that he must have looked forward with considerable curiosity to the last great adventure.

The father of William Crawford Gorgas was a Pennsylvania - born Yankee, Josiah Gorgas, a graduate of West Point, who became, strange to say, chief ordnance officer for Jefferson Davis and the Confederate Government. But, for some years before the outbreak of the Civil War, Josiah Gorgas had had military residence in the South, and in Alabama in 1853 he married Amelia Gayle, the daughter of John Gayle, an upstanding political and judicial citizen of that state. Late in 1854 William Crawford Gorgas was born in a little town in Alabama. On the day following July the Fourth in 1920 he breathed his last in a military hospital in the city of London; in his final illness he was visited by the King of England; the British Government ordered his funeral from Saint Paul's Cathedral; his own government placed his body at final rest in the front lawn of the fine old home of General Robert E. Lee.

One easily gets the notion that Gorgas was essentially a fighting man. His father went out of Richmond with the disappearing Confederate Government; the boy witnessed from the streets of the stricken city the fiery and wild disorder of the beginning of reconstruction; he lived through that poverty-stricken period while his father was president of Sewanee University and later of the University of Alabama. Army life called him; it was in his blood. Failure to secure an appointment to West Point did not overwhelm him. He got his academic degree from Sewanee; his medical degree from Bellevue; in 1882 he became a medical officer in the United States army, and soon afterwards, while stationed in a Texas garrison, he saw in others and felt in his own body the terrors of yellow fever. Service in the Spanish-American War gave him further experience with the malady and with malaria. With Walter Reed, Henry R. Carter, Victor C. Vaughan, Carlos Finlay, Lazear, the martyr, and others, he set about finding out the facts in the apparent contagiousness of yellow fever. (Dr. Carter was buried a few days ago in Ashland, Virginia.) Finlay, the native Havana physician, had long believed the disease was transmitted by a mosquito. The Reed Commission proved the theory advocated by Finlay, and in clearing up Havana and freeing it from yellow fever, Gorgas made manifest the soundness of the theory. In the Panama Zone, in preparation for the construction of the great canal, he destroyed the yellow fever-carrying and malaria-carrying types of mosquito, and that miasmatic marsh was made as healthful as a mountain resort. For the British Government Gorgas investigated the terrible epidemic of pneumonia in the native mine-worker in South Africa, and for the Rockefeller Foundation he made a comprehensive tour of inspection with inspirational results throughout South America. Finally, Woodrow Wilson made him Surgeon-General of

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the United States army, from which he was retired on account of age three days after the Armistice was signed.

Gorgas was a fighting man. Perhaps he was not a great doctor. But he was a great administrator, a medical diplomat, a tireless, resourceful, persistent, sensible, scientific adventurer and frontiersman in bringing into practical use the theories of others. But for his work Cuba would still probably be a pestilential island, and the Panama Canal would not exist, and much of the rest of the world might still live in dread of yellow fever.

The book is a good biography of a big man, and there are in it many glimpses of other men, some big others not big.

Its pages were written by the widow of Doctor Gorgas in collaboration with Burton J. Hendrick, who immortalized himself through his biography of another great Southerner, Walter H. Page. Five dollars will fetch the volume to the doctor's study table. There it should be. It is interesting, informative, inspiring. It constitutes another valid basis for the pride of a medical man in a great profession.

—*Jas. K. H.*

Development of Our Knowledge of Tuberculosis, by Lawrence F. Flick, M.D., LL.D., co-founder of the Rush Hospital for Diseases of the Chest; organizer of the Pennsylvania Society for the Prevention of Tuberculosis; co-founder of the Free Hospital for Poor Consumptives and White Haven Sanatorium Association; co-founder of the Henry Phipps Institute; co-organizer of the National Association for the Study and Prevention of Tuberculosis; chairman of the Committee on International Congress on Tuberculosis in Washington, 1908; ex-president of the International Anti-tuberculosis Association. Author of "The Crusade Against Tuberculosis—Consumption a Curable and Preventable Disease." \$7.50. 738 Pine Street, Philadelphia, 1925.

From preface to index this is a rare volume. It deals with the development

of our knowledge of "The Captain of the Hosts of Death" in such a way as to enlarge our understanding of the disease and of orderly human effort, to save for the student an enormous amount of individual work, and to ward off the sense of discouragement which so often comes over one who contemplates the ravages of this foe of man and his friends.

Tuberculosis is portrayed from the viewpoint of the abstract scientist, the practitioner of medicine, the layman and the victim. Conceptions concerning it at the dawn of human history are given, and changes in these, not all in the nature of progress, are traced clearly, interestingly and informingly. The rational mode of treating the disease among the Greeks is quite striking, insistence being made on the prime importance of feeding with milk. The Romans of Pliny's day recognized the value of eggs and prescribed them with honey or oil. Galen recognized tubercles but does not appear to have connected them with consumption.

"Between the third and the seventeenth centuries there was little progress in the development of knowledge of tuberculosis";—or of anything else, it might well be said. Importance is attached to the work of Sylvius, who (about 1650) added something to the knowledge of the pathology of the disease, by recognizing the tuberculous nature of scrofula.

Morton's "Phthisiologia" is given two chapters. In the later part of the seventeenth century it was the most pretentious work on the subject. He recommends "food which has a good juice and is grateful to the patient's palate and stomach." He recognizes the ill effects of lactation on the disease. In treatment he placed a milk diet first, gave iron a place of importance and thought much harm could come from failure to bleed. His observations on the tendency to delay seeking aid and the danger of this delay have a very modern sound.

Manget of Geneva, in 1700, recorded his findings in forty-nine autopsies, among them some cases of general milary tuberculosis, gave a fair description

of the tubercle and stated that he found similar bodies in cattle, hogs, rabbits and chickens.

In 1751 there was a law passed in Spain which indicated a fuller understanding of the contagion of the disease than was possessed in any other country. This law directed that all articles which had come into intimate contact with a patient who had died of consumption should be consumed by fire.

New knowledge afforded by the discovery of the value of percussion and auscultation is recorded. The tragically unfortunate influence of Antoine Portal's pronouncements against the contagiousness of tuberculosis lasted practically down to our own time. Benjamin Rush recorded the opinion that the tubercles were "the effects of general debility."

In the early years of the nineteenth century Bayle advanced the knowledge of this disease "more than all had done before him." His studies included more than nine hundred autopsies, many of these being on cases which he had seen at the bedside. He described the occult, the incipient, the confirmed and the advanced stages of the disease, and insisted each was a part of the same essential process. His wisdom is attested by this warning, "When one tries a new remedy one can not be too much on his guard against false conclusions to which unexpected success may give rise."

The confusion and the retardation of progress produced by disputes among various so-called authorities was the distinguishing feature of the period from 1825 to 1866.

Virchow's work in cellular pathology brought him to appreciation of Bayle's labors and to the elaboration of the conclusions at which he had arrived. The tremendous advances made by Pasteur and Villemin are given enthusiastic recognition. Koch's search for, discovery and demonstration of the tubercle bacillus are described in detailed quotations. The far-reaching influence of this knowledge, including the production and putting into use of tuberculin, conclude the work.

It is a wonderful story of the progress of knowledge of the disease which is the greatest enemy of human-kind. It is a revelation of all that is strong and all that is weak in man; of his single-minded, tedious labor for truth, and his insistence on the bigoted conceits of his predecessors and himself. It should be carefully studied, for its information and its inspiration, by every doctor of medicine.

The Medical Record Visiting List or Physicians' Diary for 1926. Revised. \$2.00. New York, William Wood & Company, Medical Publishers.

This neat leather-covered booklet contains well-arranged blanks for recording data on sixty patients per week, and a great deal of information which it is well to have at hand at all times. This latter includes a calendar, a table of weight and measure equivalents, maximum dosages, a contagious disease diagnostic table, treatments for poisoning, signs of death, hints on the writing of wills and many other matters of importance.

There are special sections for recording obstetric engagements and notes on obstetric practice, and vaccinations and a register of deaths. An unusual and quite valuable feature is space for nurses' addresses.

The Art of Medical Treatment With Reference Both to the Patient and to His Friends, by Francis W. Palfrey, M.D., Visiting Physician, Boston City Hospital; Instructor in Medicine, Harvard University. Octavo of 463 pages. Philadelphia and London: W. B. Saunders Company, 1925. Cloth \$4.50.

The author impresses the fact that treatment should not be synonymous with the giving of prescriptions. The importance of making the patient comfortable is constantly kept to the fore.

The arrangement in a systematic way, under heads is unusual, and will prove valuable. In order, for each disease, there are as follows: *first thoughts, placing, diet, remedial, supportive, minor care, nursing, information, and preventive.* Certainly the keeping in mind

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of such an orderly arrangement for directing treatment will prevent the overlooking of important matters and, at the same time, give the patient and his friends a comforting assurance that everything is being attended to.

Drugs and other measures which have been found useful over a long period are not discarded merely because no scientific explanation has been found for their beneficial effects.

Appendices treat of stimulation, bedsores, diet, duodenal intubation, transfusion and other things. One on "Cults and Quackery" is of especial value. The natural tendency to seek relief from mysterious sources is recognized.

It is sanely stated that more attention should be paid to manipulative measures in certain local diseases and to proper treatment directed to the mind in neuroses, each under proper supervision; and that "the non-medical public must be given a clearer insight into the general facts of medical science."

A book written in such a tone can not fail to find a ready welcome and great usefulness.

Simplifying Motherhood, being a Handbook on the Care of the Baby During the First Year, by Frank Howard Richardson, A.B., M.D., Brooklyn, N. Y., Regional Consultant in Diseases of Children to the N. Y. State Department of Health; Chief of Nutrition Class, Brooklyn Hospital; Attending Pediatrician to Brooklyn Orphan Asylum; Vice Dean Southern Pediatric Seminar; Director Children's (Summer) Clinic, Black Mountain, N. C.; Lecturer to Teachers College, School of Practical Arts (Nursing); Collab. Editor Archives of Pediatrics; Ped. Ed. Med. Rev. of Rev. and Southern Medicine and Surgery; ex-President Brooklyn Pediatric Society. Containing a Chapter on Breast Feeding, by Isaac A. Abt., M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago, Ill. Illustrated. \$1.75. G. P. Putnam's Sons, New York and London, 1925.

Southern Medicine and Surgery is proud to attest its appreciation of its own, and it is not in the least afraid that the putting into practice of the advice offered in this volume will result in anything detrimental to the patient, the author, or those who vouch for the author.

Motherhood is necessarily the most complicated of all vocations. It should be shorn of all its needless complexities, and this is doubly true of those which result in actual harm.

The insistence on breast feeding as a needful and feasible thing is heartening to all who have made any observations on the unfortunate results of other methods. And the equally firm insistence that supplementary feedings of an entirely satisfactory nature can be made and kept in a simple way, is good news of the first order.

Many traditions are abandoned in the light of carefully checked experience which shows them to be based on fallacy or plain nonsense.

Such common-sense methods as are taught in this little book will produce healthier babies and happier homes; and, as methods based on such reasoning are more and more applied by all medical men in managing their patients, we shall see the influence of the chiro and the Eddyite wane, and the regular doctor commanding a real influence in the councils of the nation.

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The plant consists of twelve separate buildings, located in a beautifully shaded fifty-acre lawn, in the midst of a hundred and twenty-acre tract of land. Remoteness from any neighbors assures absolute quietness.

The large number of detached buildings makes easy the satisfactory and congenial grouping of patients. Separate buildings are provided for men and for women. Rooms may be had single or en suite, with or without private bath. A few cottages are designed for individual patients.

The buildings are lighted by electricity, heated by water, and are well supplied with baths. The water supply for the entire institution is derived from an artesian well on the grounds, of approved therapeutic value.

The scope of the work of the sanatorium is limited to the diagnosis and the treatment of nervous and mental disorders, alcoholic and drug habituation.

Every helpful facility is provided for this, and the institution is well equipped to care for such patients. It affords an ideal place for rest and up-building under medical supervision.

Four physicians reside at the sanatorium and devote their entire attention to the patients.

A chartered training school for nurses provides especially equipped nurses—both men and women—for the care of the patients.

Systematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

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MISCELLANY

Preventing Typhoid.

Warning people against the increase in typhoid fever which frequently occurs in early fall, Dr. Chester T. Brown, associate medical director of the Prudential Insurance Company, reminds them that one of the most valuable preventive measures against the disease is vaccination.

"This is the time of year when vacationists returning from country places where there was typhoid are likely to infect those around them," said Dr. Brown. "A typhoid carrier may never have had the disease. When a typhoid epidemic occurs in a neighborhood, where the water supply is apparently pure, it often takes a long while to discover the source of the infection. Then it usually turns out to be some person who has been handling food consumed by the community. There is virtually no way in which the typhoid carrier can be detected by the layman. The only real safeguard against contagion is vaccination.

"Persons experiencing any severe intestinal disturbance and a tendency to fever should immediately consult a physician. If typhoid develops the patient should be isolated and no one admitted to the room except the physician and the attending nurse. All bed and table linen, and all garments used by him must be disinfected before being sent to the family laundry. Dishes and other utensils should not be used by others and should be sterilized by boiling after each using."

There has been a marked decrease in the typhoid death rate, but it is coming in the category of preventable diseases and physicians in public health work will never be satisfied until the disease is virtually stamped out. In 1910 the death rate from typhoid was 23.5 per 100,000 population, while in 1922 it had dropped to 7.5 per 100,000 population, according to figures furnished by the Bureau of Census.

Don't Commit Suicide Gradually.

Man himself is cheating science of her victory in the conservation of human life.

Medical science has conquered to a large degree the scourges which decimated men in bygone ages. It has almost conquered the infectious diseases of children, and is saving so many of the human young for maturity and productive citizenship that our forefathers in their day would have thought the effects of science nothing short of miraculous. It has also safeguarded the lives of women in their destiny of perpetuating the race.

Man, however, holds the gifts of science lightly. Having been saved from the perils of childhood, having escaped smallpox, typhus, cholera, typhoid fever and other diseases which killed people by the thousands thirty or forty years ago, he heedlessly abuses himself and through wrong eating habits, lack of proper outdoor activity and a life that demands too severe a strain upon his nervous system, undermines his health and manages often to die younger than did his grandfather.

Dr. William G. Exton, head of the longevity service, maintained by the Prudential Insurance Company, in discussing the triumphs of science in the field of preventive medicine, deplored this indifference to health on the part of so many people, and emphasized the great benefits to be expected from what he called the newer, or personally applied, preventive medicine.

"Science, working for the good of all, continues to triumph over the waste of human life in the mass," said Dr. Exton. "The individual man or woman, unappreciative of these efforts, forms habits that defeat the life works of countless men who have labored to vanquish disease and conserve human life. "The fact is that while babies born today have many times more chance of living to maturity than they did twenty-five years ago, the person of thirty-five

today needs help to keep as many years ahead of him as had his grandfathers when he was 35 years old. The failure is that of the individual—not of medical science or physicians. To-day man has everything but himself working in his favor for health and longevity.

"The public health work of the last twenty years, the fight against tuberculosis—then referred to as the 'great white plague'—and the consequent decrease in the tuberculosis death rate, the introductions of anti-toxins for typhoid, diphtheria and now scarlet fever, has caused a material decrease in the death rate during the last twenty-five years. This decrease has been by far the greatest in the younger ages, particularly during infancy and childhood.

"The improved sanitation everywhere and its beneficent effect upon health is a development which is now taken for granted. The teaching of hygiene in the schools and this propaganda generally has made any deflection from the strictest personal cleanliness a cause of shame and embarrassment. People have also been taught much about food and its relation to the bodily processes and health.

"Yet heart and arterial troubles are making themselves felt more than they did a generation ago. The same fact holds true of diseases of the digestive system and the kidneys. Rheumatism, neuritis, vertigo and other ailments are signs of a disregard of the organs upon which the functions of the body are directly dependent. They withstand the abuses heaped upon them without break-

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ing down until a point is reached when structure is undermined and then it is too late to do much in the way of repair.

"For example, diabetes may go on for years without troublesome symptoms. During this time control by simple treatment is easy if its presence be known. Certain kidney diseases are very insidious and progress almost imperceptibly until approaching the terminal stages. Simple measures would often stay their progress if applied in time.

"Similarly, tendencies to apoplexy, arterial troubles and the nervous diseases, if discovered in time, can frequently be averted, or held in check for years. It is for this reason that all enlightened physicians are urging the periodical health review habit in which the Prudential is active in helping them through its longevity service. Our millions of policyholders are being told regularly of the privilege they and the physicians enjoy in being able to call on the longevity service at any time for health help and many have been greatly benefited.

"Every normal, healthy minded person wants to live as long as he can and to enjoy his full span of life without the burdens of chronic disease. But to do so he must think 20 years ahead and when he reaches thirty-five or forty

have some competent physician regularly check up on his health condition. He cannot subject his body and mind to the strain of the strenuous life, eat what and when he pleases, and expect to be hale and hearty and to keep going to 70. If the average adult would pause every year long enough to take a health inventory, not so many would drop in their tracks at fifty or thereabouts."

Change of the Time and Place of Meeting of the Medical Society of the State of North Carolina

Southern Pines, October 16: On account of the conflict of the date of the meeting of the Medical Society of the State of North Carolina with the meeting of its parent organization, the American Medical Association, the House of Delegates of the Medical Society of the State of North Carolina, has by vote, changed the time and place of meeting from Wilmington, April 20-21-22, to Wrightsville Beach, June 15-16-17.

The president, Dr. Wm. deB. MacNider, Chapel Hill, is taking a personal interest in the program, and is arranging several features that will be of great value and importance to those in attendance. The election of a new Board of Medical Examiners will take place at this session, the six year term of the present Board expiring after their June 1926 examinations.

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*Your assistance in keeping this list revised to date, as well as in supplying medical news notes is greatly desired.—Ed.

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THE MEDICAL MAN IN COURT

W. M. HENDREN, President North Carolina Bar Association

The facility with which the administration of the law adapts itself to the remarkable strides of science and human progress is nowhere more evident than in its use of the expert witness, a type of witness that in the earlier history of the law existed only in a rudimentary way.

Our present method of using experts as witnesses is not the earliest or only method used. In earlier times and before trial by jury was much developed, there were two methods of using what expert knowledge there was:

First, to select as jurymen such persons as were by experience specially fitted to know the class of facts which were before them; and,

Second, to call to the aid of the court skilled persons whose opinion it might adopt or not, as it pleased.

The present method of calling before the jury skilled persons as witnesses and inviting them into the labyrinthine maze of the hypothetical question, speaking by and large, is fairly recent.

In 1645, we find the Court summoning a jury of merchants to try merchants' affairs "because it was conceived they might have more knowledge of the Matters in Difference which were to be tried, than others who were not of that Profession." Lord Holt, in 1783, in the celebrated case of *Buller vs. Crips*, asked the opinion of London merchants as to the effect of refusing negotiability to promissory notes.

Nowadays, a large proportion of cases before our courts admit of expert testimony, and every kind of special skill, study, or experience,—from the *beaux arts* to the humble treatment of a corn,—is professionally deposed about in court, and *ex cathedra* theories and

systems of the very highest importance, involving the lives, characters and fortunes of parties to the suits, are made issues of such splendor and attractiveness as to nearly, if not quite, obscure the real issues in many cases; though often in other cases furnishing the only means of doing justice to the parties.

But the variety of expert witness most used, and so directly related to the law as to require and have a special department in it, viz.: forensic medicine, is the medical man, and of him it is my purpose to speak more particularly, under the title, "The Medical Man in Court."

Origin of Expert Testimony

Doubtless the early trials by ordeal and torture were not participated in by medical men; though, to the twentieth century doctor, attending upon a trial is both an ordeal and a torture. The real beginning of recognition by the law of the expert witness is ascribed to the publication in 1553 by the Emperor Charles V. of Germany, of the Caroline Code, in which it was directed that the opinion of medical men should be taken in cases where death was alleged to have occurred by violence, and suspicion existed of a criminal agency.

Again, in 1606, King Henry IV. of France, directed his chief physician to appoint two surgeons in each city or large town, whose duty it should be to examine and report on all wounded or murdered persons; and it is from this nucleus that the system of French medical jurisprudence has come.

At or about this same time we begin to find authentic recorded instances of the employment of medical witness in criminal trials in England. In these early days, notwithstanding the trials were participated in by representatives of two of the learned professions, that

¹Read before the Eighth (N. C.) District Medical Society, Reidsville, October 23, 1925.

of medicine and law, we find them surrounded by what to us is little less than silly superstition, with the result influenced, if not determined, by the most preposterous circumstances. For instance, in the trial for the murder of Jane Norkott in 1628, we have the record of what happened, where, after the lapse of thirty days, the body was disinterred for a second inquest. At the first inquest the coroner's jury returned a verdict of suicide. When the case came on for trial upon the indictment for murder, evidence was offered and received that when the body of the deceased was disinterred one of the persons accused of the murder touched the body, "whereupon the brow of the dead, which before was of a livid and carrion color, began to have a dew or gentle sweat arise upon it, which increased by degrees till the sweat ran down in drops on the face, the brow turned to a lively and fresh color, and the deceased opened one of her eyes and shut it again; and this opening of the eye was done several times; she likewise thrust out the ring or marriage finger three times and pulled it in again, and the finger dropped blood on the grave."

About the earliest case which has come to my attention wherein the medical expert was called upon to testify upon a matter directly in issue, occurred in 1665, during the reign of Charles II. of England, commonly spoken of as the case of the Suffolk witches. Rose Culender and Amy Duny were on trial upon the charge of bewitching children. One of the most enlightened and distinguished physicians of his time, Sir Thomas Browne, testified to his belief in witchcraft, and it was largely upon his testimony that the unfortunate women were convicted and hanged. But it does not lie in my mouth to put any particular emphasis on this testimony by way of disparagement of the medical profession, because Chief Justice Hale, who presided at the trial, in the course of his charge to the jury said "that there were such creatures as witches he had no doubt at all." At that stage of the development of our knowledge the two professions seem to be on a parity.

Criticism of Such Testimony

That doctors differed even in the early part of the Eighteenth Century and that judges were skeptical of medical expert testimony, is shown by the Judge's charge in the trial of Spencer Cowper, an Englishman of high position, for the murder of a Quakeress, Sarah Stout, whose body was found one morning in a mill stream. The evidence showed that Cowper was the last person seen with her on the night before. The medical questions involved were controverted by physicians on both sides and this led Baron Hatsell, who presided at the trial, to say: "You have heard also what the doctors and surgeons said on the one side and the other concerning the swimming and sinking of dead bodies in the water; but I can find no certainty in it, and I leave it to your consideration. The doctors and surgeons have talked a great deal to this purpose and of the water going into the lungs or thorax, but unless you have more skill in anatomy than I you will not be much edified by it."

These remarks have a decided resemblance to some of the observations made these days on the merits of the same kind of evidence.

It is reported that a certain lawyer,—I neither vouch for the incident nor adopt the sentiment,—in the trial of a case, having encountered the testimony of an expert witness called by his adversary, which threatened to ruin his cause, exasperated thereby and smarting under the sense of impending defeat, commenced his closing address to the jury as follows: "Gentlemen of the jury, there are three kinds of liars,—the common liar, the damned liar, and the scientific expert."

While the language of criticism is usually less severe, it must be admitted the sentiment expressed by that exasperated lawyer lurks in the background of much that is said of the scientific witness, not only by defeated lawyers and their enraged clients, but also by eminent members of the legal profession, both lawyers and judges, as well as by worthy and respectable members of the general public outside of the profession

involved. It has gotten to be quite the fashion to belittle the testimony of the medical expert and to revile the person giving the evidence.

A judge of the Supreme Court of the United States has declared that "experience has shown that opposite opinions of persons professing to be experts may be obtained to any amount and (is) perplexing instead of elucidating the questions involved in the issue."

In the famous trial of Palmer, in England, in 1856, for the murder of Cook by poisoning, more than a dozen medical men and chemists testified with great positiveness, but in direct opposition to each other. Lord Chief Justice Campbell, in charging the jury, remarked:

"With regard to the medical witnesses, I must observe that, although there were among them gentlemen of high honor, consummate integrity, and profound scientific knowledge, who came here with the sincere wish to speak the truth, there were also gentlemen whose object was to procure an acquittal of the prisoner. It is, in my opinion, indispensable to the administration of justice that a witness should not be turned into an advocate, nor an advocate into a witness."

Professor John Ordronaux declared, in 1874: "There is a growing tendency to look with distrust upon every form of skilled testimony. Fatal exhibitions of scientific inaccuracy and self-contradiction cannot but weaken public confidence in the value of all such evidence. If Science, for a consideration, can be induced to prove anything which a litigant needs in order to sustain his side of the issue, then Science is fairly open to the charge of venality and perjury, rendered the more base by the disguise of natural truth in which she robes herself." And he adds: "*Some remedy is called for, both in the interests of humanity and justice.*"

Professor Charles F. Himes, in the Journal of the Franklin Institute, Vol. 135, p. 409, indulges in these remarks.

"Perhaps the testimony which least deserves credit with the jury is that of the skilled witness. It is often surprising to see with what facility and to

what an extent their views can be made to correspond with the wishes or the interests of the parties who call them. *They do not, indeed, wilfully misrepresent what they think, but their judgment becomes so warped by regarding the subject in one point of view, that even when conscientiously disposed, they are incapable of expressing a candid opinion They are selected on account of their ability to express a favorable opinion*, which, there is great reason to believe, is in many instances the result alone of employment and the bias growing out of it."

I have had the temerity to call attention to criticisms of the testimony of the expert only as furnishing the background of what is, further on, to be put down in this paper. The common estimate of the expert justifies, if it does not demand, frank consideration of the subject by both lawyer and doctor, for both are held in blame. It would be deplorable, indeed, if such criticisms were justified by the facts. As a rule, the language in which the critic couches his criticism depends very largely, if not altogether, upon the mental attitude of the critic towards things in general. For instance, one suggests that the testimony is given and received for a consideration, while another acquits the witness of venality, and explains it on the basis of a natural or acquired bias.

This bias or inclination in favor of the party by whom the witness is called is probably the most frequent complaint of all against the expert witness; and in the midst of a heated controversy, or even in the receding afterglow of such controversy, it is an easy step from bias to the use of terms indicating dishonesty and corruption. But it is my belief that there are relatively few instances in which a scientific witness permits himself to testify or to be engaged on a side contrary to his convictions, derived from a careful examination of the case. There is no doubt about the necessity for improvement in the methods and practices surrounding the use of expert testimony; but, in defense of the professions from which experts are drawn, and in defense of the legal profession,

it should be said, that with all its defects, the abuse of expert testimony is not so bad as it appears on the surface. The great body of expert testimony is given by honest men for honest lawyers, on the right side of honest cases. Naturally, all of this testimony gets little, if any, notice in the newspapers, but the disagreement of experts in sensational cases does get extraordinary publicity. The greater portion of expert testimony against which there may be directed any suspicion has grown out of personal injury cases; will cases in which it has been alleged that the testators were of unsound mind, and murder cases in which the defense has brought forward that the murderer was of unsound mind at the time he committed the act. Some of these cases are widely reported, and the conflict of expert testimony is thus heralded to the world. These cases, however, are comparatively few. In the usual case there is no substantial conflict, and the testimony is given by conscientious and capable witnesses and the testimony receives no publicity.

In truth, the professional man is not more biased than the ordinary lay witness. It is only that his bias or supposed pecuniary subserviency, when discovered, is in a more marked and unpleasant contrast with that ideal of impartiality and trustworthiness which is naturally associated with abstract scientific truth. So, too, the frequent inconclusiveness, uncertainties and contradictions of expert testimony are not more radical than the same baffling features in testimony founded on ordinary observations by the layman's senses. They merely disappoint more sharply our usual conceptions of the accuracy of scientific knowledge.

That the practice under the present method has for years exhibited shortcomings which are lamentable is undeniable. Extreme cases, of more or less frequent occurrence, have shaken the faith of jurors in expert witnesses. Professional men of honorable instincts and high scientific standing have come to look upon the witness box as a golgotha, and disclaim all respect for the law's methods of investigation.

By way of a digression, I feel disposed to say that in common with the general run of things there is a decided disposition among certain members of the medical profession to consider that the criminal with the slightest abnormality of either action or mind is a subject for the psychopathic ward in a hospital rather than for the penitentiary or the electric chair. We have invented, or may be discovered, so many different forms of mental diseases lately, that there is hardly any crime attended with any unusual features which is not sought to be explained upon the ground that the perpetrator can come under one of the many new forms of mental disease. We have got into the habit these days of saying that punishment as a deterrent of crime is old fashioned and that the death penalty has demonstrated that it does not act as a deterrent upon crime. I do not see how any thoughtful man can say this in America, because whether the death penalty does or does not act as a deterrent upon crime has never been tried in America. To make a test of that proposition we would have to hang at least fifty per cent. of our criminals who commit capital felonies, and we all know the truth is that not one in five receives the extreme penalty. I suggest that, before we discard the death penalty as a factor in handling criminals, we at least give it a trial. Let's get the habit of punishing our criminals rather than trying them as unfortunate members of society and trying to reform them. But all of this is quite in keeping with modern times. We have abolished hell and hanging and have quit using calomel,—all three rather drastic remedies, but in my judgment quite necessary of use in many instances.

Sources of Abuse

Most of the abuses of expert testimony grow directly out of the nature of the legal controversy. There has been developed, after centuries of growth, the method in litigation, in which two opposed advocates, representing two opposed parties, strive in court. The performance is admittedly for each contestant one-sided and parti-

san. One advocate contends that one contention is correct and the opposing advocate makes just the opposite contention. The theory underlying this method of ascertaining the truth is, that out of the conflicting contentions the bright jewel of truth will be discovered. Into this performance, which is essentially a fight, the expert witnesses are brought as a part of the partisan attempt to prove one contention with a minimum of regard, sometimes without any regard, to the claims of the opposition. This atmosphere is alien to a scientific investigation. So, out of the nature of the controversy comes the chief criticism of expert testimony, that it is one-sided and partisan. Certainly the lawyer should be careful how he joins in this particular criticism of the medical expert. For it should be obvious that the expert is one element in the controversy, selected by the advocate to take a part in the controversial proceedings. It is not at all certain that the contentious method is the best method of establishing justice, but it is quite securely fixed at the present time, and the evils and suggested remedies must be considered in the light of things as they are and not as we would have them be.

Expert Evidence is Essential

While it is undoubtedly true that a large proportion of the public entertains pessimistic views concerning the value of expert testimony, yet a moment's consideration must convince all reasonable men that it is of the greatest importance that a jury or other tribunal charged with the duty of ascertaining the truth concerning a controverted matter, should be assisted by the knowledge and opinion of men specially trained in those matters of science and skill with which the ordinary juror or judge is unacquainted. And to exclude such matters of information must, in many instances, compel a denial of justice, imperil rights of life, liberty and property, and destroy the safeguards of society.

A learned and practical chemist can tell (but I cannot, nor can any juror), whether stains upon a garment are of

blood or rust, and if of blood, whether it be the blood of man or beast, and yet upon the true answer of such inquiry a human life may depend. So the question whether a death has been caused by poison can ordinarily be determined only by an experienced toxicologist. Indeed, the field of judicial investigation requiring the assistance of experts is illimitable. The anatomy of the human frame, the diseases of the human body, the derangement of the functions of the human brain,—in some form or other;—these are matters of daily investigation in the courts, and concerning all these things the average juror, lawyer and judge is so profoundly ignorant that the search for truth unaided by the knowledge and judgment of the scientific medical expert would be utterly hopeless.

Instead of indulging in captious and oft-times unfair criticism of the medical expert, the public should be impressed with the fact that the testimony of the scientific expert is an important factor in the trial of cases, becoming more and more important with the advancement of science in new and, as yet, unexplored regions.

Courts cannot exclude this evidence if they would, and so the effect and value of the best evidence which the most advanced science can produce should not be impaired by a fashionable and unjust assault and unnecessary taint. Medical testimony is of too much importance to be disregarded and ignored. When delivered with caution and without bias in favor of either party, or in aid of some speculative and favorite theory, it becomes a salutary means of preventing even an intelligent jury from following a popular prejudice and deciding a cause on inconsistent and unsound principles.

Objection is made because of the want of agreement upon the same subject and in the same case among equally learned men, rendering their testimony (it is said) uncertain, confusing and bewildering, to the extent that it is unreliable and of little value.

Of course there are, and always will be, differences of opinion among experts of the highest character, not so much with regard to well established facts, but with respect to probable inferences from facts. It certainly does not lie in the mouth of the legal profession to give countenance to this criticism, since there is no profession so strongly characterized by differences of opinion on every subject,—lawyers as well as judges constantly disagreeing, and the latter not infrequently over-ruling one another's decisions. Probably the only profession in whom it would be more unbecoming to take part in this criticism is the clergy, the members of which it may have been observed are not entirely unanimous in their interpretation of the Holy Scriptures. It is a visible truth that doctors, as well as lawyers and ministers of the Gospel, do disagree. It would be marvelous and deplorable if they did not. If there were no disagreements, investigations and experiments would cease, and science, literature and art would sink to a dead level of stupidity and laziness. If scholars and learned men had come to a unanimous condition of agreement and learning a hundred years ago, we should have had none of the wonderful discoveries and inventions and none of the marvelous victories and triumphs in medicine and surgery that have distinguished and illuminated recent years.

The Hypothetical Question

It is a strange irony, points out Mr. Wigmore in his *Treatise on Evidence*, that the hypothetical question, which is one of the few truly scientific features of the rules of evidence, should have become that feature which does most to disgust men of science with the law of evidence. It must be admitted that the hypothetical question, misused by the clumsy and abused by the clever, has, in practice, led to intolerable obstruction of truth. It may be so framed as to artificially clamp the mouth of the witness so that his answer to a complex question may not express his actual opinion of the actual case. It may also be so framed as to its length as to confuse and mislead everybody. For in-

stance, a question of more than 3400 words was asked in the trial of Guiteau for the assassination of President Garfield. In a murder trial in New York six experts were examined. Most of them had national reputations and were called upon to answer a hypothetical question consisting of 6,000 words. Another hypothetical question contained 20,000 words, and required two hours to read it. This question was propounded to Dr. Jelley, a Boston expert in insanity, in the Tuckerman will case, involving the capacity of the testator. The learned doctor answered the twenty-thousand word question in three words: "I don't know."

Notwithstanding the recognized abuse of the hypothetical question, yet, so long as the expert is admitted to express an opinion upon facts not within the range of his own knowledge, the hypothetical question in some form or another must remain. It is a necessity under the jury system of trials. Whenever a witness is expressing an opinion upon facts which are not within the range of his own knowledge, the facts to be considered by the expert must be placed before him as a hypothesis only, else it cannot be known what effect shall be given the testimony; that is, it cannot be known whether the conclusion of the witness is apart from or in connection with the controverted fact.

In order to obtain the opinion of a witness on facts not testified to by himself, one of two modes must be followed; either the witness is present and hears all the testimony, or the testimony is summed up in the question put to him: whether, if certain facts testified to are true, he can form an opinion and what that opinion is. I have stated that the hypothetical question is necessary under a system of jurisprudence where the facts are to be determined by a jury. However, without impinging upon its underlying principle, a practical modification of its use has been suggested, which is: where an expert witness has not had personal observation of matters of fact in the case in hand, but has listened to or read any

or all of the testimony, he may be asked by the party calling him to state his conclusion, without specifying in the question the data forming the basis of the conclusion, leaving it to the opposite party on cross-examination to require the witness to specify the data on the hypothesis of which his conclusion was based. This enables the expert to express his opinion upon the whole case and not upon a partisan part of the case.

In England and the United States the contesting parties select their own experts and pay them, with the result, as a rule, that equally qualified experts thus appear on both sides flatly contradicting each other. In France the court may order an investigation and report by experts whenever it deems it advisable. If the parties cannot agree upon at least three experts the court appoints them. In Germany, since 1870, after the issues are framed upon which the expert testimony is sought, the parties may agree upon the experts, and the court appoints those agreed upon, but it may confine the parties to a given number of experts. Sometimes the court submits to the parties the names of a number of experts and allows each side to strike out a certain number of them and then appoints those remaining. In Prussia it is said to have been the custom to appoint as experts a physician and surgeon for every county. In addition, there is a medical college in each province to which an appeal lies if experts disagree, or if the experts desire it.

At one time the plan was in vogue in Leeds, England, for medical men to refuse to testify unless before doing so they could meet in conference with the experts from the other side and have an exchange of views. This plan, which has in it seeds of much good, is not apt to be adopted generally so long as a lawsuit partakes so largely of a partisan struggle to maintain at all hazards one theory or contention rather than of an orderly and calm investigation of what the truth is.

I do not overlook the faults and imperfections of the present system and methods of procedure used in presenting scientific testimony, but I do believe that its faults and imperfections have been very considerably magnified. For whatever is wrong and capable of redress, for so much of the evils of the present system as are not imaginary, what and where is the remedy? Without any progress towards a satisfactory result, search for it has been prosecuted for years. Not hoping to add anything to the sum of knowledge on this subject, yet I have undertaken, for your information and consideration, to mention a few of the most prominent suggested remedies.

Suggested Remedies

The question of importance to consider in connection with all of these proposed regulations of the method of using expert testimony, of course, is the ultimate bearing they will have upon the interests of justice. The question of reform should be considered entirely aside from the wishes or advantages of advocates or of experts. As testimony of this class when properly employed does assist in discovering and proving the facts, the interests of justice manifestly will be promoted by methods and procedure which insure the assistance to the court of the ablest and most reliable specialists in all fields. Any proposed regulation that tends to repel and lessen the effectiveness of this aid is obviously undesirable. A procedure and a practice that tends to keep competent and honest men out of the courts will necessarily tend to defeat justice. It should be possible in every community to readily enlist, use, compensate and protect the best technical and professional men of every kind who can assist in promoting justice.

Various methods have been suggested for the regulation of expert testimony and the proposed reforms have mainly been aimed at medical and insanity testimony as employed in damage, murder and contested will cases. Many of these proposed regulations

have not properly taken into account the conditions under which the testimony is produced.

The present method of making use of medical expert testimony, and indeed of any other expert testimony, is far from satisfactory. The situation is obvious and has produced an extensive literature about it, mostly developed in the medical field. Most of this literature is critical and destructive. Few constructive proposals that are at all feasible have been made. Most of them overlook the situation arising out of a jury trial under constitutional guaranties and limitations. It is this circumstance that makes inapplicable methods of procedure that have worked well in other countries where the judicial machinery is fundamentally different from ours.

Notwithstanding the integrity of the medical expert, not only in individual cases, but in some instances as a class, his testimony is frequently challenged and impugned, yet every thoughtful person must know that the medical expert is, as a class, just as honorable as any other class of witness. A real basis of criticism, however, lies in the distrust of the expert witness as a witness whose testimony is shaped by his bias for the party calling him. This bias is, in part, attributed to the special fee which has been paid or promised him, and in part to his prior consultation with the party at whose instance he is called and his self-committal to a particular view. This leads the public mind around to the conclusion that the candid scientific opinion of the witness has had no fair opportunity of expression or even of formation, swerved as he is by this partisan committal.

Since this is the most valid ground of criticism, it would seem to follow fairly and naturally that a remedy to be effective must tend to remove this partisan feature, i. e., must bring the witness into court free from any committal to either party. Even when this status for the expert has been reached, we will not secure perfection.

How can this be done? The literature on the subject has about come to this, that the state, and not the party

shall be the one to pay his fee and that the court, not the party, shall be the one to select and summon him.

Based on the foregoing essentials, there have emerged concrete proposals which may be classified generally as follows:

(a) To substitute an official jury of experts where a scientific fact is in issue. This proposal comes almost exclusively from scientific men. Lawyers at once recognize the impracticability in America of any such proposal;

First, because the jury system constitutionally cannot thus be interfered with; and,

Second, because in virtually all litigation the scientific fact is seldom more than a part of the issue; therefore, it cannot be easily segregated for the purpose of being committed to a second and subsidiary jury.

(b) Another suggestion is the appointment of official experts as witnesses to take the place of paid partisan experts as witnesses, the latter being abolished. This plan is equally futile.

First, because it interferes with the traditional right of the parties to produce such evidence as they think useful.

Second, because it would commit the fate of such issues completely to a body of men, who, under possible local political conditions, would be wholly unreliable, and the new state of things would often be worse than the old. To restrict parties solely to the evidence of official experts, constitutional amendments would be necessary, involving changes so sweeping as to be antagonistic to the spirit which now pervades our judicial institutions. And besides, if the fundamental law did not stand in the way, it is doubtful that this plan will work. I believe that justice is generally well and honestly administered; but such a thing is conceivable, that a judge might unwittingly appoint incompetent official experts who were anything but representatives of the best element in the medical profession. Take the case of a physician sued for malpractice, finding himself, if condemned by the opinions of the official experts,

unable to exonerate himself by calling as witnesses his non-official brethren whose testimony would demonstrate that the appointees of the court were wilfully wrong or ignorantly mistaken. A man may be a good judge of law and yet be a poor judge of doctors.

The constitutional obstacles to any legislation which shall confine litigants to the opinion of officially selected experts leave the legislature at liberty, nevertheless, to provide for the appointment of such experts if it sees fit to do so; but as neither party could be obliged to avail themselves of their service, and as either could contradict their testimony by that of outside experts, it may be doubtful whether the plan would be of any actual value in practice.

(c) The third type of expedient consists in authorizing the court to call an expert selected by the judge himself. This expert, however, to be merely additional to such experts as the parties may choose to call on their sides. This is the only one of the suggestions that is at all feasible, and it may be worthy of a trial. However, I can readily see possible grounds of abuse and objection to this plan. So far as it affects North Carolina, the rotating system of judges tends to negative that proper and accurate knowledge of doctors in a county essential to enable the judge, independent of particular partisan suggestions, to select a thoroughly qualified and disinterested expert. Then, too, the fact that one of the experts is selected by the Court itself would tend to magnify the force and effect of the testimony of that witness. Almost inevitably in the clash of opinion which has developed between the partisan experts paid by the parties, the jury would turn for its real guidance to the impartial expert summoned and selected by the judge, and his conclusion would have almost a decisive weight with the jury.

The partisan character of expert testimony reaches its zenith when the medical man participates in a trial not only as a witness giving opinion evidence, but also as an advisor to counsel trying the case. The wise doctor will take care not to act in both capacities.

If he is to testify in the case he will not act as assistant counsel. If he acts as assistant counsel, he will keep off the witness stand. Now, there is no good reason why the most distinguished physician should not place his professional knowledge and experience at the service of one or the other of the parties to a litigation which involves questions of medical science. To do so cannot justly subject him to reproach, but it does lessen his fitness and his usefulness as a witness in that litigation. In assisting counsel, he will inevitably come to share the sentiments of counsel as to the results.

Dr. Putnam (in the *Boston Medical and Surgical Journal*, October 22, 1896) gives some advice to his professional brethren which seems to me worthy of serious consideration. He says:

"As a matter of fact, we go into court prepared to accentuate our differences and to minimize our agreements, and this unedifying state of affairs is partly due to the fact that we enlist ourselves too much as lawyers on one and the other side. . . . Our legal colleagues expect too much when they ask us to give only that portion of our views which makes their side of the argument appear stronger. . . . It is more common to hear the truth told than the whole truth. . . . Experts who trust one another should more frequently seek the privilege of consultation together before appearing in court. . . . There is room for real and reasonable disagreement between experts, but I think we might at least agree in seeking to bring about early settlements, on the ground that, as far as one judge, the plaintiff, the defendant, and the community would generally be the gainers. . . . In this direction physicians can do much to educate the public mind, provided only they act in concert."

I do not believe that the prospect of reform in this field is beyond the wit and wisdom of the doctors and the lawyers. After all is said and done, the most effective and the most practical remedy lies with the lawyer and doctor. There is one direction in which it seems to me there is some promise of success.

It is slower and more difficult than the remedy usually adopted for the evils of American life which is to pass a law. You have a code of medical ethics which every physician and surgeon is bound in all professional honor to observe. By that code you regulate your own conduct in the practice of medicine and insist that all those who join the ranks of your profession from year to year shall agree to regulate theirs. No statute can be more binding nor near so elastic and equitable. Why may you not extend its provisions so as to embrace the conduct of the medical man when he assumes the role of the expert witness? The matter is absolutely within your own control. You can declare in your code that a certain course of action on the part of a medical expert shall be deemed honorable and professional, and that a certain other course of action shall be dishonorable and unprofessional. The first step would necessarily be tentative. Mistakes would be made which would have to be corrected. The rule from which most good would be expected might prove useless, but in making them and changing them you would be independent of the legislature; you could act solely for the good of your profession, untrammelled by official influence or power and so far as you desire advice from the Bench or Bar, I am sure it would be gladly afforded.

A signal advantage in dealing with the subject in this way is that it would involve no interference with the existing rules of judicial procedure. Accepted rights of litigants or the manner of trying law suits would in no wise be affected. The needed reforms would be brought about by the compulsory obligation of your own code of ethics acting directly and personally upon each member of your profession. That code, amended as I am sure it might be if the physicians and surgeons of this country took the matter seriously in hand, by commanding medical experts to do what is right and subject them to professional censure and obloquy when doing what is wrong, would be more efficacious than any law on the subject

which a legislature could enact. It would be your own law, adopted by yourselves, for yourselves, and it would have that powerful significance which belongs alone to laws which are a natural growth out of a condition which leads to their adoption.

To the action of your profession in some such way as this, and to a correction of some of the abuses of medical expert testimony by my own profession, I look with more confidence than any way else for the ultimate accomplishment of all that is desirable in the improvements of medical expert evidence.

Let us remedy the evils, but while we are endeavoring to do so, let us avoid an exaggerated denunciation which is calculated to convince the community that no surgeon or physician that takes the stand is honest. This is a libel on the most unselfish profession in the world. The lawyer in his partisan zeal, if not directly, certainly by innuendo, too frequently unduly emphasizes the circumstance that the doctor is receiving a special fee as a witness. To be sure, a physician who comes into court, not as an ordinary witness, but in a special capacity, should be entitled to receive compensation which in some measure approximates what he is actually losing by his attendance upon court, without having it suggested to the jury that the special fee of and within itself impeaches all that he says apart from its otherwise intrinsic truth and value.

Just here I think the advocate should take care to distinguish between the qualified and honorable expert and the ignorant and venal expert. If the latter shall appear as a witness it is the bounden duty of the advocate to point to every circumstance which tends to explain the difference of opinion which has developed between the experts. But we all know that this criticism of the medical expert is, to a large extent, indiscriminate and independent both of the standing of the medical man in the community and of the nature and character of testimony given in the particular case.

At this point my professional brethren may serve the cause of justice without lessening one whit the weight of their obligation to their clients.

Quite recently I appeared in a case where a majority of the physicians in two counties in North Carolina appeared as experts for one of the parties, and I heard counsel suggest to the jury that they should reject all of the testimony of all these doctors solely because they were receiving *per diem* compensation which ranged from \$25 to \$50. Now, I would not say that all of the doctors in these two counties are above suspicion and beyond reproach, but I do say that it is unthinkable that all of the doctors, or practically all of the doctors, in any county in North Carolina have fallen to so low an estate that they will give unworthy and impeachable testimony to a jury merely because they receive more pay than the statute allows the lay witness.

The burden is upon your profession and upon mine. The burden is upon you and upon me to do what we can to bring about a condition under which justice shall receive the benefit of your special knowledge and training, free from an atmosphere in which its value is largely dissipated because of the popular notion that it is purchased partisan evidence.

The practice of law, like that of medicine, is much concerned with the abnormal. One profession has much to do with disease and suffering, and the other with injustice and crime, but this contact need not develop a narrowing pessimism that tends to make of this world a place of anguish and of sin. The correct and wider view makes work in both fields a service of help and of rescue in lessening suffering and combating evil. The lawyer is the natural champion to be called upon to defend right, promote justice, protect the weak, and guard those priceless heritages of the ages that we inadequately describe as freedom and civilization. Through all the stress and strain the great physician and the great advocate both come to realize more and more that honesty

and health are the normal conditions, and that the high task given to them is that of making these conditions more nearly universal.

Let the scientific witness come into court with clean hands and a pure heart; with sincerity of purpose; with a tendency and desire to ascertain and recognize truth wherever it may be found; to conceal nothing, and be mindful of his oath which requires him not only to speak the truth, but the whole truth. And let the lawyer not forget that his duty to his client does not always demand that he should indulge in the popular criticism of the medical man, or so frame his question as to hinder rather than help truth.

Thus can we all be ministers of justice, than which there is no nobler calling.

Nails! Nails! Nails!

One day's mail at the New York City office of the State Department of Labor contains the first report of an average of thirty accidents from nails. This average was gained through noting the reports for five different days over a period of one month.

It can well be said that nails "attack every part of the human body." The reports state, in part: "Stepped on nail in floor," "stepped on nail in board on floor," "nail in guard rail tore his scalp," "nail flew from box while loading truck, infected wound on nose," "while stuffing paper in barrel, punctured arm on a nail," "nail in bench tore leg," "rolling barrel a nail caught tip of little finger on right hand pulling off part of the nail and tip of little finger," "while packing a case the cover, which was full of nails, fell down, the nails going into his hand," "fell down and a nail punctured stomach," "stick with a large protruding nail fell onto hand," "driving a nail it flew into face cutting cheek," etc., etc.

Good housekeeping will eliminate many such accidents. All wood containing protruding nails should be gathered and stored in a safe place. Waste material or rubbish with nails therein should be burned and the resulting refuse safely disposed of.

Again under varying circumstances they should be pulled out of boards, boxes, barrels, crates, etc., or may be bent double so that the point can be driven down and become imbedded in the wood.

In any event it is one of the dangerously located nails.

PRESIDENT'S ADDRESS

How to Make a District Society a Success

C. M. VAN POOLE, M.D., Salisbury

The plan whereby our medical organization was made to consist of county societies, district societies, state associations, and the American medical association, must be conceded as not only just but also democratic. It affords an interlocking relationship that unites the constituent units and correlates their activities, and at the same time amalgamates and organizes into one large body the medical profession as a whole. Experience has justified the wisdom of that plan and has created that solidarity that is so essential to achievement and progress.

As times change, so too must we change. As new events create new conditions, we in turn must adapt ourselves to new relationships and assume new or extended obligations. Thus is the spirit of organized effort determined and developed. If we accept such obligations and well acquit ourselves in their performance, then do we measure up to the modern spirit, and progress is recorded. Should we fail to do so, retrogression ensues and organization becomes dormant, and unless aroused, speedily disintegrates and ceases to function.

It becomes imperative, then, that we should pause from time to time and confer, in order that we may determine whether we are measuring up to the spirit of present-day organized effort.

The first fundamental of medical organization was, and still is, to meet, discuss, relate and appraise medical knowledge, scientific discoveries, experiences and practice—all to the one end for collective and individual improvement and professional ability. That feature embraces the scientific programs of our society meetings. Compliance with this primal fundamental is as essential today as it was twenty-five years ago. It follows, therefore, that each component unit must constantly exert itself to maintain a high standard for its medi-

cal programs in order that our members may ever be abreast of scientific progress. It is the duty of the county unit to keep the ruts of habit filled up and engender among local members a desire to remain in the van of modern practice. I desire to urge an increasing alertness to this basic object and advise increasing attention to the formulating of scientific programs. We should plan them far in advance with careful thought and consideration of topics, speakers and discussants.

As individuals, as a profession and as an organization, the progress of our day no longer permits us to live unto ourselves and within ourselves. Our scientific discoveries and advancement has laid in store for us a vast fund of knowledge which, if properly imparted to the public, will go far and do much for the efficiency, physical welfare, happiness and longevity of all humankind. This fund of knowledge, this civic resource, is not ours to hold and conceal for selfish purposes. If we judiciously disseminate it, we will retain the mastery that rightly belongs to the profession. Unless we so disseminate it, society will demand its receipt from other sources that are bound to be created, and when it does, we shall have forfeited our mastery, and our profession of today will be subordinated. That eventuality is sure to occur should we permit ourselves to become so negligent and irresponsible.

It therefore follows that the second important spirit that should motivate medical organized effort of today is the obligation we have to educate the public as to the truths and benefits of modern scientific medicine.

In certain counties in this district splendid progress has been made. A basis has been thoughtfully constructed. But in other counties the attitude is still characterized with far too much indifference and far too little achievement. Some counties are indifferent and accord scant interest or support.

The need presses, and I stress the imperativeness of that need, for every county unit to immediately rally to the support of this work and to become aggressively active. Speakers are available and assistance from other counties can be had for the asking. County society sponsorship, through an active working committee and well planned, followed-through effort, must become the concern and duty of each county medical society, in order that the public may be enlightened as to medical scientific truths and our public obligations remain unchallenged.

I have thus briefly and superficially cited a few outstanding activities that call for concerted effort on our part. They, by no means, embrace all that should be included in our programs. It would consume far too much time, were I to enumerate in essential only, medical legislative education, hospital and nursing standards, membership, personnel, community practices, public clinics, our interrelationships, post-graduate instruction, and several allied features which properly, but are far too often neglected, fall within our scope of organization of objects and duties.

The general appraisal and criticism appears to be justified that we are in the midst of a critical period in our profession's history. We have drifted and been self-centered, giving little heed to the forces that are amassing around. Some have leaned overly far toward the mercenary side of the question and the golden calf bids well to supplant the real object of professional service. We need not hope for any Moses to lead us out of our professional wilderness of today. It is only by the directing guidance of you, the officers of our county societies, that we can hope to establish and benefit by the powerful, though now somewhat dormant forces, that lie within the scope of this organized medical unit. To do so entails time, labor, thought, effort and zeal. We must give much, and receive little or no personal reward. We may confidently expect, if we are not, much criticism and animosity. Often, we will struggle and be oppressed and inclined to discontinue our work. If we

do, of course we will fail. If we persist with fixed determination, we will win, and the reward will be the personal knowledge and satisfaction that we have labored in a most worthy cause.

I am not seeking to arouse false or transient enthusiasm. I am earnestly pleading to awaken a consciousness that will convince each of us that heavy burdens rest upon each and every one of us. I am hoping that we will depart from this meeting with a fixed, unswerving purpose and determination to return to our county societies and promptly undertake to:

1st. Bring about up-to-date scientific programs for regular meetings.

2nd. Inspire, institute and foster, with the aid of selected members, an increasing number of public meetings for the education of the public in regard to scientific medicine.

3rd. To join with and assume directing control of all public health work, clinics and hospital activities in so far as medicine is involved.

4th. To enlist and interest all eligible members of the profession in each county in the work of the county society.

5th. To cause each society to enhance the type of medical service in the community.

6th. To reawaken the spirit of organized effort for the attainment of the mastery and honor of our profession.

7th. To beget professional fellowship.

These, gentlemen, embrace the essentials of the present day spirit of organized medical effort. For its accomplishment and for our assistance, we will find the council and officers of the state society ever ready to respond, in so far as it is given to them, to our request for assistance. It remains for each county society and each county secretary to determine whether or not we are to be relegated to the rear ranks. There are peculiar conditions and obstacles in each county. These can be met by fixed determination on the part of the society in charge.

May the discussions today assist and inspire us to that type of service.

ON REACTION AGAINST REPRESSION*

JAMES K. HALL, M.D., Richmond

Words, like folks, acquire characters, some good, some bad. The very word gold suggests purity and durability and splendor. The word honor has a wholesome, appealing sound. Irritability, the very word itself, suggests the unpleasant. It carries with it an intimation of meanness and despicableness. During our formative years, when our vocabularies were being acquired, we got a bad opinion of the word irritability. But when we became interested in the sciences that have to do with living matter we had to correct our incorrect ideas about the quality referred to by the term irritability. We had either been taught, or else we had acquired the notion, that irritability meant fussiness, meanness, disagreeableness, unpleasant responsiveness to the happenings that pleasant people accepted philosophically, if not politely. I have never quite got over having some such idea about the word irritability. But I have learned that I should interpret the term as meaning responsiveness to a stimulus. The response may be ugly, but it may be, on the other hand, happy and agreeable.

We know that living things possess this strange quality—this ability to respond to environment. The season is at hand when we must observe myriad manifestations of it—in the grass, in the budding shrub, in the stateliest tree, in the fowls of the air, in the multitude of insects of the earth, in the way of a maid with a man!

It is as natural for the living thing, be it animal or vegetable, to make response to the wooing world around it as it is for the spark to fly upward. Nature has planned and has prayed, perhaps, that the response might be free and unfettered. It is the way of Nature to yield to impulses; to allow the living thing to do the act simply because the impulse is to do it. Plant life and animal life other than in man is illustrative of that principle. But civilization, so-called, has come upon the

earth, and it has imposed restrictions, and repressions, and hidden desires, longings and yearnings, and sometimes hypocrisies. Multiplication of stimuli; repression of reaction to those stimuli—that spells our civilization, our culture, our sicknesses, many of them, our crimes, our wars, and most of our unhappiness.

As a consequence of inability to discover an underlying pathologic physical condition as a basis for many psychoses and neuroses, practitioners in these fields have been forced to view many manifestations once regarded as symptoms as genuine disease entities. Keen recognition of this fact by many outside the medical profession has made possible the growth of the various kinds of mental healing. Physicians have been brought to realize that the mind itself may be sick, and that when disordered, treatment should be directed to it and not to some healthy organ of the body.

The problem presenting itself to neurologists and to psychiatrists is, therefore, to differentiate physical, nervous or mental disease from psychological nervous or mental disorder, and to apply the indicated treatment. Disease of organic origin, however great may be the associated mental or nervous disturbance (for example, paresis), must be treated as a physical disease. On the contrary, psychological disease, if I may be permitted to use the term, should be treated as such. Hysteria, for instance, is not amenable to curative influences by surgery or by the exhibition of drugs.

This new method of viewing and of treating many of the so-called functional nervous and mental diseases, to which I would very briefly call your attention, is now known as psychoanalysis. It has become both an art and a science. It is both old and new. To some vague degree it has been known since the early days of human history, and to some extent it has long been made use of in arriving at the mainspring of human conduct. The believer in psychoanalysis

*Read by invitation before the Cumberland County Medical Society at Fayetteville, June 9, 1925.

believes in evolution as applied to the mind as firmly as in the theory of physical evolution. He asserts with absolute positiveness that thought springs from thought; that idea begets idea, and that speech and behavior, manifestations of ideation, are always absolutely predetermined. It is probably true beyond doubt that the mental development of the individual reproduces the various mental phases through which the race has passed in its ascent. This charitable view of one's own animal-like impulses, at times, may be made use of in attributing them to unavoidable inheritances. Psychoanalysis traces back in the individual to their remotest origin all thought processes, and in certain morbid conditions it undertakes to bring about mental normality by correcting and properly balancing disordered or antagonistic mental manifestations.

This method lends itself to investigation of any mental process, normal or abnormal, for the two differ quantitatively and not qualitatively. In normal mental functioning—which, by the way, does not exist—the intellect keeps the feeling element in some sort of check; in many abnormal conditions feeling colors too heavily the intellectual processes. William James, in that delightful little address, "A Certain Blindness in Human Beings," says: "Our judgments concerning this world of things, big or little, depend on the feelings the things arouse in us. If we were radically feelingless and if ideas were the only things our minds could entertain, we should lose all our likes and dislikes at a stroke, and be unable to point to any one situation or experience in life more valuable or significant than another. Now this blindness in human beings is the blindness with which we are all afflicted in regard to the feelings of creatures and people different from ourselves."

This matter of feeling causes one at times, willynilly, to view, certain mental processes in such a light as to give rise to morbid conditions known as distinct diseases. All the neuroses and psychoneuroses and some of the psychoses, per-

haps, are due solely to conflicting thought processes, but thought processes heavily impregnated with feeling.

The modern theory is that every psychoneurotic symptom is a disguised manifestation of a repressed wish. Two trains of thought, more or less antagonistic, are seeking to express themselves. One thought may carry with it the idea of shame, disgust, and loathing, and be repugnant to the individual's so-called better self. His mental and moral censor, therefore, forces it down; submerges it; puts it out of consciousness, or, as we technically say, it is repressed. It is forgotten, but not dead; and, like hidden infection, it may emerge. In the psychoneurotic the repressed wish does reappear, but so twisted and distorted by the strong censorship placed upon it that its manifestation is unrecognized by the individual. The theory has been enunciated by Freud, the founder of this new psychology, that these repressed wishes are in every instance of a sexual nature. We must remember, however, that Freud uses the term in the broadest possible sense, and that the reproductive act is but a single manifestation of this important part of the personality. In this broad sense the term is the mainspring of practically all human activity, and it is almost synonymous with love. In this connection, Ernest Jones quotes Freud practically as follows: "Under certain circumstances, sexual excitations arise that cannot follow their natural course of leading either to physical gratification or conscious desire for such. Being deflected from their aim, they manifest themselves mentally as morbid anxiety; physically, as the bodily accompaniments of this."

From this new viewpoint one sees in morbid anxiety a manifestation of repressed sexuality, disguised, to be sure, from the individual. Desire that cannot go out and find its mate, so to speak, turns in, and what the patient really constantly fears is an outburst of his own illicit longings. It is but another evidence of that wonderful defense-mechanism with which we are so well, or so badly, as we may think, protected.

Inflammation and pain subserve the same sort of protective function in the physical domain, yet either may bring about invalidism, and not health. This mechanism underlies the production of all hysterical manifestations, all the obsessions, and the phobias of various kinds. Patients are loath to let go their symptoms, because it is by this method alone that many of them secure sexual gratification. The fact that the individual is unaware of the cause of the condition does not affect the validity of the statement. Much physical ill health is due to organic causes not distinctly localized and not even suspected by the individual.

Sexuality is far-reaching in its influence, and the advocates of the psychoanalytic theory may not be going too far in asserting that in an individual sexually normal a neurosis or a psycho-neurosis cannot arise. The ultimate origin of these conflicts is placed in early childhood, and the assertion is made that in all such conditions as those referred to the sexual trauma has taken place before the fifth year. Sexuality in the broad sense begins probably with consciousness. It is not directed, however, toward reproduction until the so-called age of puberty is reached.

The assertion that children are essentially animals, for a time at least, devoid of all moral sense, should not provoke criticism. In the early days of individual human life all thought is absolutely selfish. The child thinks only of its own comfort and pleasure. Altruism is unknown, both in word and in deed. Individual civilization, refinement and culture, come largely through repression of biologically inherited animal instincts. Repression is preached to the child in the home, in the school, and from the pulpit. For the first years of life children's ears are more familiar with the phrase, "Do not," than with any other.

The importance of childhood cannot be overestimated. Much earlier than any of us are aware the mental and moral tendencies develop which are to govern us during the remainder of

our days. John Fiske has written an informative essay on the importance of childhood as the developmental period of personality, in which he calls particular attention to man's slow and tedious approach to maturity in contrast to the rapid maturity of the young of lower animals. Solomon says that "Even a child is known by his doings," and nothing can be more important than the command of this wise man, "Train up a child in the way he should go, and when he is old he will not depart from it." How can he? When once moulded, how can the form be changed?

Repressive influences from various sources are constantly brought to bear on the adult race, just as inhibitive influences are exercised over the child in a more restricted field. We are, as a race, inhibited in our tendencies by regard for the opinion of our fellowman, by law, by religion, and by conscience—that quality, whatever it may be, which made Socrates drink the poison rather than run away from death. All government, of whatever kind, is based on this repressive action—the need from the point of view of the general good of suppressing most of our primal tendencies and desires. Autocratic government leaves the censorship in control of one, or, at most, a few; democratic government aims to leave the censorship with the individual; but there never has been and never can be absolute democratic government. Individual liberty is unknown.

The tendency everywhere nowadays is, I fear, to pay less attention to the individual and more attention to the mass. Conscious inhibition or unconscious repression reaches a certain point, however, beyond which it cannot go. In the mass, when this point is reached, individuals bolt the caucuses, strikes occur, rebellion takes place, and war is declared against the repressing force. These reactions against extreme repression in organized society are analogous to neurotic symptoms of repression in the individual. But we are slowly becoming wiser, and, when organized signs of social or political unrest arise, conferences are held be-

tween the censor element and the repressed element. Deliberate search is made for the cause, and, when found, it is removed or made less active, and in this way political and social health is restored.

By two or three different processes effort is made by this psychoanalytic method to diagnosticate neurasthenia, anxiety states, true hysteria, and conditions manifested by various obsessions and phobias. Explanation of the process is made to the patient, whose hearty co-operation must be obtained; and the patient's full confidence in the examiner must be established. To begin with, the usual sort of history may be obtained, but a history which looks more deeply than usual into the individual's moral and psychic life. Action is traced to idea, and idea to idea. The patient is asked to relate all his dreams, for no other process reveals so intimately the inner life of the individual's mind. In the dream, the patient realizes what he subconsciously longs for or fears in his every-day life. Notwithstanding the unintelligibility to the individual of most dreams on account of the protective use of symbolism, no dream is without deep meaning, and those dreams related most reluctantly, because of their apparent absurdity, or because of their gross character, are generally of most value. Dreams attended by fear are said to be essentially of sexual origin. Another method of reaching the subconscious mind is through free word association. A long list of selected words are repeated one by one in the patient's hearing, and he is asked to respond promptly without restraint with the first word suggested by the examiner's test word. These same words are repeated day after day, and, if the patient always reacts with the same word, it is safe to assume that that particular word represents to the individual an abiding and a more or less dominant subconscious thought.

By this method, and by close observation, it is possible to arrive at an intimate knowledge of the personality. It is possible even to find in the subconsciousness the origin of motives unsus-

pected even by the individual. In the inscription, "Know Thyself," carved above the doorway of a Greek philosopher, the implication is clear that no one really knows himself, and that an intimate knowledge of one's self would embrace all knowledge. Consequently, psychoanalysis can be used with value on one's self, if one can be honest with one's self. By it one can search the heart either of self or of another. Freud says, "He who has eyes to see and ears to hear, becomes convinced that mortals can hide no secrets. Whoever is silent with the lips rattles with the finger tips; betrayal oozes out of every pore."

But, one may ask, "Canst thou minister to a mind diseased" by such a method? How is it done? The helpfulness of the method, the therapy of the procedure, is based upon the idea that hypocrisy damages, that concealment hurts, and that the repressed longings and desires, whether they be within the patient's knowledge or hidden beneath consciousness in the subconscious, act as irritating foreign bodies in the mental or the moral domain. Unknown or unrecognized, they fail to enter into the stream of thought; they are not assimilated; they remain outside the healthful every-day life to vex and to harass. When these unknown or hidden causes of symptoms are brought face to face with the patient they generally disappear; become absorbed into the stream of healthy daily living, and are forgotten; or else they become transformed into ennobling impulses—sublimed, we say—and the individual is afterwards, in the language of the street, "a different person."

Sublimation of this sort is the wonder of the world. The once gay, giddy, selfish belle becomes sublimed in spinsterhood into the leading figure in all good works; the wild and carefree medical student becomes transformed into a staid and responsible member of a noble profession; the neurotic becomes transfigured into a sane and happy being; Jerry McAuley emerges from Bowery thug into the powerful preacher; and by the sublimation of

tory zeal Saul of Tarsus becomes one of the most heroic figures in human history.

Francis Bacon never wrote more wisely than in these lines: "Physicians are some of them so pleasing and conformable to the humor of the patient as they press not the true cure of the disease; and some other are so regular in proceeding according to art for the disease, as they respect not sufficiently the condition of the patient." It would be well for us as physicians to realize that the Kingdom of Heaven and the Kingdom of Hell, too, are within, and

that suffering and misery and sorrow and despair, even death itself, may come from a mind disordered. And is it not time for us to think of other means of righting some of its disorders than by knife and by drugs? Can we not understand that riches and unhappiness may abide in the same house; and that joy and gladness may be unacquainted with stocks and bonds?

What wonderful diagnosticians we might be if only we could see deep into the situation with the clearness and the penetration of Nathan, and so be able to exclaim—"Thou art the man."

SOME MODERN TRENDS IN THE RELATION BETWEEN THE MEDICAL PROFESSION AND THE PUBLIC*

FREDERICK R. TAYLOR, B.S., M.D., High Point

Mr. President and Members of the Rotary Club:

I consider it an honor, a privilege, and a pleasure to be invited to speak to you today. An honor, because you are a representative group of High Point's ablest men, who, by the ideals of your club, have pledged yourselves to strive to practice the Golden Rule in your everyday lives, and so raise the whole standard of the industrial and social life of this community. A privilege, because medicine, more than any other intensive field of human endeavor, needs to be brought to the public more than it has been in the past, if it is to fulfill its highest mission. A pleasure, because I have many friends in this club, and perhaps for another reason. My friend, Dr. Coe, one day informed me that I would rather talk than eat. As talking too much is even worse than eating too much, I have put my thoughts into writing as an aid to brevity.

You know, the doctors have always liked to knock the quacks, and quackery in any line of work, whether it be the practice of medicine, the teaching of school, the making of furniture, or whatnot, should be mercilessly exposed.

Quackery has existed in the past in

the regular medical profession. Here are some remedies that were in vogue about the beginning of the 17th century:

"A Swallow eaten, for to quicken the eyesight."

"Fox lungs against the consumption of the Lungs."

"Wolf's liver against the consumption of the Liver."

"An Asses' liver against the Epilepsy," etc.

This list is selected from a work published by one Johannes Rhaenodeus, a Paris physician who flourished during this period.

In the Boston Medical Library is a MS. "Receipt Book" that belonged to Governor Winthrop, which contains prescriptions for the various ills of the Pilgrims. Here is one of them:

"My Black powder against ye plague, smallpox, purples, all sorts of feavers, Poyson, either by Way of prevention, or after Infection.

"In the month of March take toades, as many as you will, alive, put them into an earthen pott, so yt it be half full; cover it with a broad tyle or iron plate; then overwhelme the pott, so yt ye bottom may be uppermost: put charcoales round about it and over it, and in the open air, not in an house, sett it on fire and lett it burne out and ex-

*Health Talk Given by Invitation to the High Point Rotary Club.

tinguish of it selfe: when it is cold, take out the toades, and in an Iron Morter pound them very well, and seare them: then in a crucible calerne them so again. The first time they will be a brown powder, the next time black. Of this you may give a dragme in a vehiculum (or drinke) inwardly in any infection taken, and let them sweat upon it in their bedds: but let them not cover their heads, especially in the small pox. For prevention, half a dragme will suffice: moderate the dose according to the strength of the portion; for I have sett downe ye greatest that is needful. There is no danger in it."

This prescription may be of lay origin, but it is at least very similar to many professional ones of the period.

Such methods of treatment have disappeared, thanks to modern science, though certain commercial interests have foisted upon us some other methods scarcely less irrational, both within and without the ranks of the regular medical profession. What medicine needs more than anything else today is to tear away the old veil of secrecy and mystery in which the physician was wont to enshroud himself, and show the public the service that the profession can render.

Medicine has had three aspects: ritualistic, altruistic, and scientific.

Ancient medicine arose in the rituals and superstitions of certain heathen priesthoods, notably those of Egypt, India, and Babylonia. For many centuries its practice was largely a matter of religious ritual, later including certain contributions from the Jewish law, some of which have a definite scientific value, especially in the prevention of disease.

With Christianity came the altruistic side of medicine, which is one of its chief glories.

The first and greatest ancient contributors to the scientific side of medicine were the Greeks, those mighty pioneers of thought. They gave us Aristotle, the Father of Science, and Hippocrates, the Father of Medicine, as well as many lesser lights. They insisted on careful first-hand observation of facts, and they

recognized and used to the best advantage the great healing power of Nature.

Greek medicine was continued through the Romans, but sad to say, one great Roman, Galen, developed such a tremendous reputation and authority that he checked medical progress for nearly 1500 years, for almost all the medical writings of this period, instead of being based on original investigation and observation, were mere quotations from Galen, and no writing was acceptable that did not begin, "Thus saith Galen," or "According to Galen," etc.

A few exceptions may be found in the works of certain Arabian physicians, though their greatest work was the preservation of the medical learning of the ancients through the dark period of the Middle Ages.

Modern medicine may be said to have its beginnings with the publication of a great work on human anatomy by a Belgian, Andreas Vesalius, in 1543. This work was based on the actual dissection of the human body, and it broke sharply with the authority of Galen. Progress was slow, however, for scientific methods had to be developed, and many doubting Thomases had to be convinced.

In 1628 came an epoch-making discovery in physiology, that of the circulation of the blood, by William Harvey of London.

The first great triumph of preventive medicine was the discovery of smallpox vaccination by Edward Jenner, an English country doctor, who published his great work in 1798, after fifteen years of careful observation and records.

In 1842 Crawford W. Long, a country doctor in Georgia, first used ether as an anesthetic in surgery, and the arch-demon Pain was shackled as never before.

In the seventies and eighties of the last century, Louis Pasteur, France's supreme gift to the world, discovered that certain diseases are caused by microorganisms, and developed a means of preventing hydrophobia in man. His work paved the way for the saving of more lives than has that of any other person who ever lived. Lord Lister's

application of this work in developing the antiseptic principle is the very foundation of modern surgery. This discovery of diphtheria antitoxin by von Behring and Kitasato is another outgrowth of Pasteur's work that has saved countless children from a horrible death. Still another is the brilliant success in the control of typhoid fever by sanitation and vaccination, which has been achieved by the combined work of many great investigators.

The Panama Canal is as much a tribute to medicine as to engineering. The heroic self-sacrifice of Reed, Carroll, Lazear, and Agramonte, who voluntarily submitted to inoculation with that great tropical scourge, yellow fever, proved that it can be transmitted only by the bite of a certain mosquito, though at the cost of immediate martyrdom for one of them, and a serious impairment of health for others that undoubtedly shortened their lives. Gorgas's genius applied their discovery so effectively in Panama and elsewhere that in 1915 he was able to write:

"I think that we are on the eve of one of the great sanitary triumphs of man, the first eradication of a disease from the face of the earth due to measures taken by man for this purpose. When this has been done, yellow fever can never return. . . . The yellow fever germ can no more be redeveloped than can the mastodon or the saber-toothed tiger."

Many other modern medical triumphs are well known to all of you. The menace of hookworm disease has been practically removed. Public education coupled with improved methods of diagnosis and treatment have materially lessened the mortality from digestive disturbances in infants and from tuberculosis. Malaria control on an extensive scale is an established fact. Every one has heard of insulin, the new remedy for diabetes. Toxin-antitoxin now offers prolonged protection against diphtheria. Scarlet fever seems to be on the eve of yielding to science.

One great and growing problem, as yet unsolved, is of very pressing im-

portance, and that is mental disease. Thirty years ago pulmonary tuberculosis was regarded as a hopeless disease. The diagnosis was made when it was literally *consumption*—the body was being consumed and wasted. The doctor hesitated to tell the patient's family, for he considered it almost equivalent to hanging crepe on the door. Now all is changed. The diagnosis is made early and stated to the patient himself, prompt, vigorous treatment insisted on, and with such management about 90 to 95 per cent of patients recover. The early diagnosis and treatment of cancer is also being insisted on, with varying degrees of success in different types of the disease. Certain types of skin cancer are practically all cured nowadays if diagnosed early and treated properly. Unfortunately, mental disease is not yet so dealt with by many physicians and the public. They hesitate to admit its existence in many patients. They have a vague feeling that it entails some kind of disgrace. There is no justification for this feeling. Man has a more complex brain and works it harder than does any other animal, and he often works it harder than he does any other organ of his body. It would be passing strange, therefore, if his brain, alone of all the organs of his body, should be immune to all kinds and degrees of disorder. It is time that we realized that minor mental disturbances exist in a large number of people, and that such conditions should be recognized and treated early, before actual insanity, with its deprivation of legal rights has developed. Such a course would by no means prevent all insanity, but it would work untold good. We need hospitals for the treatment of curable types of mental disease, and with them, an attitude on the part of the public that will recognize that there is no more stigma in being a patient in such an institution than in going elsewhere for an operation for appendicitis.

Another very important matter is the question of autopsies—of post-mortem examinations. I once published a little paper in a medical journal that happen-

ed to come to the notice of Dr. F. F. Russell, who is chief of the Division of Laboratories of the International Health Board of the Rockefeller Foundation. He very kindly wrote to me and called my attention to the fact that I had omitted to mention the matter of autopsies in my paper, and said that he thought the south especially needed to be aroused to the necessity of this work. At the Phipps Institute for Tuberculosis in Philadelphia, when a patient dies, the doctor in charge of the patient during life states his findings to the entire medical staff, and immediately thereafter the body is opened in the presence of the staff, and his findings confirmed or disproved. If disproved, he is called on to explain how he made the mistake. Such a course makes it almost impossible to be careless in the practice of medicine. *Doctors should not bury their mistakes: they should find them out before they bury them.* One world-famous diagnostician states that in at least fifty per cent of autopsies on patients examined during life by noted specialists, conditions are found that were not suspected during life. Sir William Osler said that a good diagnostician should see an autopsy daily to develop his knowledge and skill to their greatest possibilities. Discovering a mistake after death may prevent a repetition of that mistake in some other patient. Burying the mistake without discovering it will practically ensure a repetition thereof should a similar condition confront the same doctor again. When the people realize this, and not only consent more readily to autopsies when they are requested by the physician, but actually request that an autopsy be done when anyone in the family dies, we shall have a far higher standard of medical practice than we have at present.

Countless other problems remain unsolved. Furthermore, there is not quite the *entente cordiale* that should exist between the medical profession and the public. I believe that the doctors themselves are largely to blame for this situation. In the old days, when there was

so much superstition in medicine, the doctor cloaked his ignorance in an air of mystery and superiority, and would not condescend to tell the public anything. He employed high-sounding Latin phrases to further confound the layman. This policy occasionally fooled the public, but it very often fooled the doctor himself until he came to believe that he was a cross-section of Omniscience, and would become indignant if anyone dared to differ with him. This meant the end of his intellectual growth.

The wise man never fears to say, "I do not know." Often people do not understand this at first, and are stampeded by high-pressure salesmanship methods in the treatment of disease as well as in other fields, but the test of time works as inexorably here as elsewhere. Moreover, we all need to be taught, and it is a very valuable trend in the medicine of today that it is beginning to realize the importance of its teaching function towards the public.

The human body may be viewed as a machine, but it is hard for those not medically trained to realize its complexity. A mechanic may say to me, "If I don't fix your car so that it will run well, you object to paying me. Why don't you treat me the same way when I am sick?" To resent such a remark only serves to increase the misunderstanding, and lowers the medical profession in the mind of the public. If, however, I take a few moments to explain that he could not work on the basis he does if the automobile were such a complex machine that it automatically supplied itself with gas, oil, and air; continually renewed its tires, its finish, and all its parts; kept running without stopping for 60 or 70 years, and so worked that if he stopped the motor to take it apart he would permanently destroy the car; he begins to see light. Then if I add that in case of a puncture a destructive process might arise that would spread all over the car, that the car might catch many troubles from other cars in the same garage and on the street, and that at times it might get up and leave him when his work was

half done, he will probably give a grin that shows that he has been convinced.

Ethical doctors have never advertised much, largely because the field of advertising, so far as medicine is concerned, has been preempted by quacks, and the better class of medical men, like the better class of men in some other professions, could not afford to appear along with the quacks and to compete with them in glowing promises impossible of fulfilment. However, more and more we are realizing that the public should be more fully informed of the service that scientific medicine is ready to render them.

There is a movement on now in various county and state medical societies and in the American Medical Association itself, to devise ways to better inform the public of the progress being made in medicine, and to get more closely in touch with them in many ways. Perhaps the best thing that has been done yet along this line is the publication by the American Medical Association of a magazine for the public called "Hygeia." Some of the greatest spec-

ialists of the United States write for this paper, which can be bought by subscription or at many of the best news stands. It is, I believe, without question, the best and most authoritative health publication for the layman that exists anywhere in the world today. It is not written in technical language—its mission is not to confuse, but to inform the public. It is an illustrated magazine written in popular style, but with a sound scientific basis ensured by the active co-operation of many of the great masters of medicine of our day. It is a concrete result of a trend that modern medicine is developing to take the public into its confidence by coming out of the obscurity of the past into the full light of the new day.

In conclusion, let me thank you for this opportunity to be with you. If anything I have said should contribute ever so little towards bringing the medical profession into closer touch with such a representative body as the High Point Rotary Club, I shall feel that this hour has not been wasted.

ACUTE OTITIS MEDIA, ACUTE MASTOIDITIS AND NEPHRITIS*

Operation Under Local Anesthesia with Complete Recovery. Complete Tabulation of Kidney Functional Tests Before and After Operation

V. K. HART, M.D., M.S., Statesville

The writer has seen several cases of acute nephritis following acute tonsillitis. However this is the first case of a severe kidney lesion in a large series of ear cases. Such cases are occasionally recorded. It is believed that they are of sufficient rarity to warrant reporting this case. Furthermore, the kidney functional tests here presented show beautifully the patient's convalescence after operation. They are therefore highly instructive and hence give an added reason for presenting the case. The history and physical examination are abstracted as follows:

C. C. Discharging and painful left ear.

H. P. I. Patient was admitted to the hospital 4-7-25. One week previously she had an earache soon after which the ear discharged. Since that time, the ear has discharged freely and the patient has had attacks of pain in and about the ear since the onset.

P. M. H. Nothing of value can be obtained in her past medical history. She has not had a recent physical examination by any doctor before admission. Denies any previous serious illness at all.

F. H. Nothing of value.

*Read before the Ninth (N. C.) District Medical Society at Lexington, October 29, 1925.

S. H. School teacher, single, age 20 years.

Physical Examination. Inspection. The patient is a female of 20 years of age. Her complexion is rather pale but there is nothing of note in the facies. She is of good build and apparently of fair weight for her height.

Head. The pupils react to light and accommodation; the media of each eye are clear, and the eye grounds are negative.

Nose. Shows no pathology.

Throat. Negative except for chronically diseased tonsils.

Ears. The right is negative. The left shows the canal to be full of a mucopurulent discharge. After cleansing, a perforation of the posterior drum is disclosed through which the discharge is rapidly exuding. There is some pulsation of the drum. There is definite tenderness over the mastoid cortex on pressure. It is not exquisite, however, and there is no edema.

General. A general physical examination discloses nothing of value. Temperature 99.4 degrees.

Laboratory. W. B. C. 18,700. The x-ray report reads: "Right mastoid negative. Left mastoid shows slight haziness, with no destruction of cells. This is probably an early involvement." A smear and culture made from the pus of the ear show the organism to be a gram negative diplococcus, probably micrococcus catarrhalis. The day after admission a urine examination showed clouds of albumin, even with a catheterized specimen.

Clinical Course and Therapeutics. The patient was at once put to bed on routine treatment; i. e., an ice cap was applied to the left mastoid for twelve hours, laxative given, and boric acid irrigations of the left ear fourth hour followed by alcohol and boric drops. Of course the drum had been previously freely incised.

A very careful kidney functional study was made. The result showed a very severe kidney involvement. Thus the blood urea-nitrogen a few days after admission was 42.6 mgm. per 100 c.c. Her 'thalein output, done at the

same time, showed a total of only about 15 percent in the two hours. She was put on an absolute milk diet, but even then continued to show albumin in her urine up until the time of operation. At each examination many casts and pus cells were also reported. On charting the fluid output against the intake for twenty-four hours, the following percentages were obtained for the days indicated:

	3/10	3/11	3/12	3/13	3/14	3/15
Output ounces	79	76	66	76	86	57
Intake ounces	135	128	112	134	96	132
	58%	59%	57%	56%	89%	44%

Total albumin excreted in twenty-four hours follows:

	3/13	3/14	3/15
	1.2 grms.	7 grms.	.4 grms.

The severity of this girl's involvement can be seen at a glance as shown by the above tabulations. It is pointed out that these were made while the patient was on an absolute milk diet (Ounces 8 q. 2nd hour). Moreover her mastoid tenderness became progressively more marked, and particularly significant was the increase of tenderness over the tip. This augmentation of symptomatology occurred despite all local treatment. Therefore on 4-16-25, especially in view of the evident kidney lesion, it was considered inadvisable to wait any longer and left mastoidectomy was done under local anesthesia.

This was carried out using morphine gr. 1-4, atropine gr. 1-150 and scopolamine gr. 1-150, and two percent novocaine infiltration. After the operation was well under way, another 1-4 gr. of morphine was given. Of course the above medication was given hypodermically. She suffered very little discomfort. The operative findings are quoted; viz., "Extensive bone destruction with resultant granulation tissue about antrum. Frank pus in tip."

After operation her chief discomfort was due to nausea, probably caused by the morphine. This passed away in twenty-four hours. She was again put on a milk diet and made a splendid convalescence as the following record shows. It is mentioned in passing, be-

fore again taking up the kidney study, that the mastoid wound was kept freely open until the middle ear was dry. This was at the end of the second week. The mastoid wound then healed nicely.

After operation the fluid output was again charted against the fluid intake. The results are somewhat disappointing but must be discounted inasmuch as there is a big possibility of error in the charting.

These figures follow:

	3/16	3/17	3/18	3/20	3/21	3/22
Output ounces	10	20	32	35	50.5	44
Intake ounces	23	40	56	66	98	75
	43%	50%	57%	53%	52%	58%

	3/23	3/24	3/25	3/26	3/27	3/28
Output ounces	42	27	23	11	25	20
Intake ounces	74	109	82	50	55	53
	57%	25%	28%	22%	45%	38%

The total output of albumin in twenty-four hours after operation was as follows:

3/17	3/27
36 grms.	26 grms.

This was not charted after the latter date. It did show a decrease, however, as compared with the tabulations before operation.

Her urine examinations were, of course, done daily. These continued to show some albumin and many casts and pus cells up until the 21st, at which time no albumin and no casts were recorded. From then on, traces of albumin, occasional casts, and many pus cells were reported up until 4-27-25.

On 4-27-25 her phthalein output had risen to 15 per cent the first hour and 17 per cent the second hour. On 4-30-25 the blood urea-nitrogen had fallen to 22.2 mgm per 100 cc.

She was discharged from the hospital 5-2-25 with rigid instructions as to diet which of course was of a very low protein intake. At the time of dismissal a complete blood count was practically normal.

On 5-8-25 she returned for examination. The blood urea-nitrogen was 26 mgm. per 100 cc. The phthalein output was 35 per cent for the first hour and 15 per cent for the second hour. The ur-

ine contained a trace of albumin but no casts. Pus cells were still present.

On June 4th she again returned for examination. The blood urea-nitrogen was 24 mgm. per 100 cc. phthalein output was 30 per cent for the first hour and 23 per cent for the second hour. The urine showed only a slight trace of albumin. No casts and only an occasional pus cell were recorded. At this time the protein in her diet was increased.

On 7-20-25 the patient was again examined. At this time her blood urea-nitrogen was 16 mgm. per 100 cc. The phthalein output was 70 per cent for the first hour and 15 per cent for the second hour. The urine examination was negative. These figures indicate a completely return to normal kidney function.

Discussion. When this case first came under observation the writer was not sure as to whether this was an exacerbation of an already existing kidney lesion or one the direct result of her ear. He is confident now, that this was a direct metastatic involvement of the kidneys. This is shown by the patient's remarkable and progressive improvement following operation. A study of the laboratory reports previously tabulated will show this latter statement to be true.

It is believed moreover, that this kidney involvement was metastatic and not the result of a toxemia. If a toxemia only, the general reaction would have been much more severe. As it was, the patient was comparatively comfortable at all times. She was not prostrated. She ran only a moderate elevation of afternoon temperature. The highest temperature recorded was 101 and as a rule never higher than a 100. She never ran any temperature after 4-25-25. It is also pointed out that pus cells were always present in the urine, even with a catheterized specimen. This was true until she was discharged from the hospital.

It is interesting to note the blood pressure was never elevated (110-68). This was recorded before and after operation.

Ordinarily micrococcus catarrhalis is not looked upon as a particularly malignant organism. However, one of the most acute mastoids that the writer was called upon to operate during the past year was caused by infection with this bacterium.

It would seem, then, in summing up that the patient had a true blood borne infection of the kidneys with the ear as a primary focus. Certainly operation was justified as proved by the after clinical course.

Davis Hospital, Aug. 15, 1925.

THE VALUE OF MORE THOROUGH RECTAL EXAMINATION*

J. A. SMITH, M.D., Lexington

It is not the purpose of this paper to discuss the diseases of the ano-rectal region from the standpoint of the specialist, but in the light of the general practitioner who is daily called upon to diagnose and treat the common and uncomplicated diseases affecting these organs.

In order to familiarize ourselves with the diseases of these organs it will be necessary to give briefly the anatomy. The anal canal from two-thirds of an inch to one and one-fourth inches in length extends upward to the crypts of Morgagni. It is lined by stratified squamous epithelium. Surrounding the anal canal is loose cellular tissue. The rectum is a hard tubular organ from five to seven inches in length, extending upward from the anal canal, curving backward into the left sarco-iliac fossa. The mucous membrane is gathered together in folds which converge at the ano-rectal line ending at crypts of Morgagni. With the rectum inflated certain definite crescentic folds will be seen encircling it from one-half to two-thirds of its circumference. These are usually three in number with projecting ledges arranged in the form of a spiral, each one-half to one inch above the other. They are important because when infiltrated and thickened they offer obstruction to the fecal passage and ulceration on the upper surface is easily overlooked. The discovery of such ulceration will clear up the etiology of many cases of so-called diarrhea. The arteries of the rectum are the superior, middle and inferior hemorrhoidal. The superior, the

most important one, is a direct continuation of the inferior mesenteric. The middle arises from the internal iliac, and the inferior from the internal pudic. The veins follow the arteries and like the arteries, the superior returns the blood to the inferior mesenteric vein and directly into the portal circulation. Like the rest of the portal circulation, it is not supplied with valves. The lymphatics from the anal canal communicate with the inguinal glands. An early involvement of the inguinal glands indicates malignant or infectious disease of this region, while the lymphatics from the rectum drain into the peri-sacral, lumbar and mesenteric glands. The anal canal has an abundant supply of sensory nerves, while the rectum, particularly in its upper half, has no sensory supply. This accounts for the comparative absence of pain when the rectum is involved, and the intense suffering when the anal canal is involved.

It has been estimated that one person out of every seven is suffering from some disease, the relief of which would be assisted or entirely accomplished by treating the pathologic condition found on rectal examination. Physicians are consulted by many patients whose symptoms call attention at once to the ano-rectal region, while others are of the general character, such as disturbances of digestion, menstruation, urinary disturbances, backache, joint pains, sciatica or anemia.

Pain is the most frequent symptom which causes the patient to seek a physician's aid, and its character of onset and relation to the bowel movement

*Read before the Ninth (N. C.) District Medical Society at Lexington, October 29, 1925

often give clues to the diagnosis. Sharp, acute pain, or the cutting, burning or stinging quality coming on with the stool or following it points invariably to the anal region. Certain darting pains occurring at intervals between stools also point to an origin in the anal region. Pain of a throbbing character indicates some inflammatory condition which may be peri-anal, peri-rectal or integumentary abscess. Pain of a dull character may be caused by hemorrhoids, prolapse, polypus or fistula. Ulcers causing a burning sensation may be confused with burning from acid stools due to some metabolic process. Pain, dull in character and shooting down the legs, may mean cancer. Prolapse will cause a dull pain in the back. Fistula causes pain when walking. Pain referred to other portions of the body, as down the sciatic nerve into the inguinal region, or to the urethra or scrotum, is frequently caused by pathologic conditions in the rectum, which cause no local pain, whatever.

Bleeding, above all other symptoms, should call for a complete examination of the anus, rectum and sigmoid. It usually occurs during defecation, but may occur during the intervals. The character of the blood should be noted, whether liquid or clotted, pure or mixed with pus, mucous or feces. Fresh blood, discharged from the anus is usually from a local hemorrhage, but may have descended from the sigmoid colon. As a rule, the darker the blood, the higher in the bowel the source. Rectal hemorrhage, however slight, should never be taken for granted as diagnostic of hemorrhoids or any other disease, but should call for a complete examination. The local diseases of the rectum which may cause hemorrhage are internal hemorrhoids, prolapse, proctitis, malignant growths, stricture, ulceration, fistula, chancroid, chancre, polypi, fecal infections and villous growths. In many cases of so-called idiopathic anemia, if a careful rectal examination be made, a pathologic condition will be found which will explain the etiology.

Constipation is one of the most common conditions afflicting the human

race. Some have put it that every other man and every woman is constipated. No patient who comes into the office of the average physician is turned away more quickly with a single prescription, or some drug, than the constipated individual. Because of thoughtless, careless medication by practitioners who are either "too busy," or because of their lack of knowledge of rectal examination, many patients are driven to self-medication by means of cathartics and patent medicines and have been lost to the legitimate practitioner of medicine.

Anal fissure is responsible for more acute pain than any other lesion of its size occurring in the human body. The fissure is an elongated ulcer, usually at the posterior commissure of the anus. It usually occurs singly and when more than one is present it is an evidence of the presence of tubercular, gonorrheal or syphilitic infection, or is caused by some wasting disease. The poor blood supply in this region, together with the action of the sphincters keeping the parts in motion, tend to prevent healing. The ulcer becomes chronic, the skin becomes indurated and a fold is formed in such a way as to form a tag known as a "sentinel pile," which is the first thing to attract attention on examination.

Not infrequently physicians have been led into the error of taking the patient's word for the fact that he is suffering from hemorrhoids causing the symptom of pain at stool and hemorrhage, when the symptoms are caused by fissure.

Fistulae are very common in the ano-rectal region and being of many varieties, classified according to location, are very easily overlooked except on a thorough rectal examination. Many fistulae are the result of chronic cryptitis which is allowed to go on to abscess formation and never recognized in the early stages. Practically all fistulae have their internal opening in the anal canal between sphincter muscles.

Hemorrhoids, which is the most common disease of the ano-rectal region, is also the most frequently self-diagnosed and self-treated condition affecting this region. So often we practitioners are

consulted by patients who seem to think they have "bleeding piles" and without examination are given the wrong treatment, and as a consequence are driven to some quack, or so called "pile specialist" who advertises in the daily press—because they believe that members of the legal profession do not treat rectal diseases.

The diseases of this region deserve just as much thoroughness in examination and treatment as does the eye, ear, nose and throat and, in fact, patients are relieved of more pain.

This paper is not intended to show how these examinations should be made, but to act as a stimulus to the general practitioner to make these examinations a part of his routine, as he does in other regions of the body—and to do this not only means that he holds his patients from the "quack," but does a vast amount of good in relieving suffering humanity, and as a result of this has a nice little income which the "quacks" are now "gobbling" up.

ANEURYSM OF THE AORTIC ARCH WITH RUPTURE

LULA M. DISOSWAY, M.D., and DAVID R. MURCHISON, M.D., Wilmington

Case History: L. R. (No. 4645 J. W. M. H.), colored female, married, aged 39 years, was admitted to the hospital August 10, 1925, with the complaint of great shortness of breath.

Family history was unimportant.

Past History: The patient claimed she had had good general health until March, 1925, five months before this admission. She had had the usual exanthemata of childhood and no other acute infectious diseases. There was no history of headaches, or disease or disturbance of eyes, ears, nose or throat. There had been no cardio-respiratory disturbance before her present illness, and this was likewise true of her gastro-intestinal and genito-urinary systems. There was no history of syphilis and although the patient admitted having lost two children after birth, she denied having had any miscarriages or still-births.

Present Illness: The onset was some time in March, 1925, with spells of great shortness of breath, choking, feeling of lump in her throat, some pains in her chest vaguely referred to the precordium and sub-sternal region, and finally fever which accompanied her paroxysms of dyspnea. It was about this time that her Wassermann was discovered to be four plus and she was given anti-

luetic therapy, resulting in some improvement in her symptoms. However, her trouble soon returned and she was then brought to the hospital in August in great dyspnea, using all her respiratory muscles to get her breath. When she was able to speak, her story was simply that of a repetition of the attacks of dyspnea, which occurred in paroxysms, always accompanied by the feeling of a lump in her chest which "cut her wind off," pain in the chest, choking and difficulty in swallowing. She had had to stop work three weeks before this because of her loss of strength and shortness of breath. There had never been any pain of an anginal type, radiating to the arms.

Physical Examination: Patient propped up in bed, in the midst of a very severe paroxysm of asthma; cold, clammy sweat of face, chest and extremities; hardly able to talk between respiratory efforts.

Eyes: Pupils equal, regular, react equally and actively to light and with accommodation; no ptosis or exophthalmos; extra-ocular movements normal.

Ears, negative; **nose,** negative; **mouth,** mucous membranes pale; **teeth** in fair condition; **tonsils** moderately enlarged. **Neck:** Marked pulsation of veins on the two sides and in the episternal notch. Moderate enlargement of the

*From the Medical Service of the James Walker Memorial Hospital, Wilmington, N. C.

sub-maxillary glands. A tracheal tug is just felt.

Chest: Supra-clavicular fossae depressed; ribs prominent, with marked retraction of the interspaces with respiration which is quite labored, slow and shallow. A hyper-resonant percussion note is obtained generally. Breath sounds are everywhere harsh with prolongation of inspiration. No rales were heard on admission but subsequently many sonorous and sibilant rales were heard throughout the chest.

Heart: The precordial pulsation is marked; apex beat is diffuse but forceful. A thrill is palpable, systolic in time, over the precordium. No arrhythmia. Heart is enlarged to the left, dullness extending 13 cm. to the left of the mid-line, which is 2 cm. lateral to the anterior axillary line. There is a wide area of dullness behind the manubrium, extending 7 to 8 cm. to the left, and 5 to 6 cm. to the right. A fairly rough systolic murmur is heard just at the apex, and medially to this, in the parasternal line there are heard a loud systolic and also a diastolic murmur. The sounds at the base are somewhat distant but otherwise clear.

Abdomen: No enlargement of any organ, or other abnormality.

Extremities: Negative.

Skin tests for hyper-sensitiveness were made the day after admission, following the method of Drs. Cooke and Coca. Only the common inhalants were used in this test, they including Fall and Spring pollens, the various animal epithelia, cotton, wool, tobacco, pyrethrum and glue, the patient showing no positive reaction to any of the injections.

Examination of her nose, para-nasal sinuses and larynx by Dr. R. B. Sloan was quite negative.

August 18th, 8 days after admission, the patient was seen in a paroxysm, for which adrenaline was administered. Within a few minutes, when she began to get relief, it was found that there was a very unusual condition at hand, that is, a complete absence of transmission of air into the left chest below the level of the second interspace. In the

entire right chest, many squeaky and snoring rales were heard, and the breath sounds in the left apex, down to the second interspace were tubular; no rales were heard in this area, and nothing was to be heard below this level. The same condition existed in the backs, as it did in the fronts of the chest. Just after this examination, the patient was taken to the x-ray department where with the fluoroscope there was seen a large saccular mass extending to the left of the mediastinum. In spite of rotating the patient there was surprisingly little pulsation of this mass in any of its tangents.



The patient continued to have paroxysms of dyspnea at varying intervals, and usually received adrenaline hydrochloride which gave at least temporary relief. She also received potassium iodide, and one intra-venous administration of neo-arsphenamine. Progress notes stated very little improvement until after three weeks in the hospital, when her longest interval without a paroxysm was 48 hours. Two days later, the note was made that she had been having more frequent attacks of dyspnea and on the next day, September 6th, she had a paroxysm at 3 p. m., another at 8 p. m., a final one at 10:30

p. m., which ended in sudden death at 10:45 p. m.

Necropsy: (This was confined to the thoracic organs). On opening the pericardial sac, there was found a large amount of post-mortem clot, estimated at about 500 c.c. and a like amount of fluid blood. The heart was large, and



there was a large aneurysm of the ascending and transverse aorta, showing an irregular linear rupture about 2 cm. in length at its base, on the anterior surface. The sac of the aneurysm was 10 cm. deep, and 14 cm. transversely. All its walls were markedly thickened by fibrous tissue proliferation, with the exception of an area at its base from one side to another, through a part of which the perforation occurred. This area was quite thin, in fact enough so to transmit artificial light, whereas the thicker portions of the walls measured 1.5 cm. The left ventricle was characteristically hypertrophied, its walls being 1.5 cm. in thickness. Nothing of note was found in the lungs.

Comment

Of the two features of special interest in this case history which would seem to warrant its report here, one is the peculiar resemblance of the paroxysms of dyspnea to those of the ordinary so-called bronchial asthma. The dyspnea, besides being paroxysmal in nature, would begin suddenly and without rela-

tion to exertion or other known factor; it was largely inspiratory in rhythm; it was accompanied by musical squeaks and snores originating in the bronchioles, and the attacks were quite controlled by adrenaline administration. There was none of the usual brassy cough or hoarseness so characteristic of aneurysms obstructing the trachea. The rales just mentioned were entirely absent at intervals between the paroxysms, and on one occasion noted in the record above, they with breath sounds were heard only in the right chest, while in the left apex down to the second interspace tubular breathing was heard, and no breath sounds or rales transmitted at all below this level. The latter finding was noted by the two writers, and must be explained on the basis of complete obstruction of the two lower divisions of the left primary bronchus, and only partial obliteration of its upper division. Inasmuch as this phenomenon occurred shortly following an injection of adrenaline, it is interesting to speculate on its mechanism. Probably the most likely explanation is the increase of blood pressure and acceleration of the heart with consequent temporary dilatation of the aorta or aneurysmal sac on the left side, making direct pressure on the left bronchi. While adrenaline is not credited with any effect on the normal aorta or large vessels, it is easily conceivable that an aneurysm with walls such as those above described should expand under the stress of adrenaline effect. The second feature of interest is the method of termination with rupture at the base of the sac, occurring naturally in its thinnest portion, the walls of the sac being elsewhere markedly thickened by fibrous tissue. The proliferation of the latter undoubtedly accounts for the failure to visualize with the fluoroscope more than the very slightest expansile pulsation of the aneurysm.

We gratefully acknowledge our thanks to Mrs. Morris M. Caldwell, of the X-ray Department, for her kind cooperation, and to Mr. Watts Farthing for his excellent production of the post-mortem photograph of the aneurysm and heart.

PREGNANCY FOLLOWING UTERINE RADIATION*

Report of a Case

DOUGLAS P. MURPHY, M D., Rutherfordton

For a number of years radium and x-ray have been used in the treatment of benign hemorrhage from the uterus. Where a non-sterilizing dose has been employed pregnancy has occasionally followed. What effect such treatment might have upon future progeny of these individuals has been of interest to both clinicians and biologists. In view of the small number of recorded cases an additional one of recent occurrence is being reported here.

Pemberton¹ in a recent review of the literature reported four pregnancies following radium radiation. Schiller² has added one, following x-ray treatment for myomata. Thirty-eight pregnancies are reported in all, following x-ray and radium exposures of the uterus. In this series there were:

Normal infants at birth	24
Deformed children	1
Premature labors	2
Miscarriages (2nd—5th month) ..	10
Hysterectomy for fibroid (5th month)	1

One of the normal births was a twin, making twenty-four normal infants. Three of the miscarriages were induced. The mother of the deformed child had been radiated during pregnancy. X-ray was used in this case. The infant was a micro-cephalic with cloudiness of the lenses, a condition reported as occurring in experimental work on animals. Pemberton concluded that normal children can follow radiation of the uterus; that deformed and under developed children are not likely to follow such treatment. He thinks that that the chance of miscarriage is greater than in untreated women, and that the treatment of women already pregnant may produce poorly developed or deformed children.

The following case is reported in which a full term pregnancy followed an intra-uterine radium exposure:

Mrs. E.O.P., white, age 20, reported

that her menses had always been irregular. She was married at 16, and had what she thought was a three months miscarriage a few months later. Following this, the periods continued to be irregular, and during the past year she had had two severe bleeding spells. The patient was large and fat and this suggested that there was some disturbance of her endocrine balance. The pelvic organs did not appear to be abnormal in any respect. Treatment consisted of an intra-uterine exposure of radium emanation, 238 millicuries, using a filtration of 1-2 mm. silver, 1 1-2 mm. of brass and 2 mm. of rubber, being placed in the uterine canal for 3 hours and 15 minutes. After nine months, during which the periods were decidedly more regular, a normal pregnancy took place. This went to term uneventfully. Labor was complicated by a transverse position and inertia. Labor pains practically ceased at the end of 24 hours. From this time on there were no signs of fetal life. At the end of six more hours delivery was effected by cesarian section. A stillbirth resulted but the child was perfectly developed and weighed over seven pounds.

In this patient the radium treatment improved very much the regularity of the menstrual cycle. The vaginal bleeding which had been quite severe was checked so that there was not a single severe flow in any month prior to the time pregnancy took place. Pregnancy might have taken place without the radiation, but in view of the evidence it would seem fair to credit this pregnancy to the beneficial effect of the radium. The pregnancy following the radiation was normal up until the time of delivery, which was at term. The stillbirth is accounted for by the mechanical factors and in view of the development and size of the child, there is no reason to suspect the radium treatment as having anything to do with it.

*Read before Tri County Medical Society at Maiden, N. C., November 10, 1925.

This report adds one more case to the small number already reported, in which a pregnancy has followed radiation of the uterus. It confirms the findings of other observers that pregnancy can follow such treatment and that a perfectly developed full term child can be expected.

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CORNEOSCLERAL TREPHINING (ELLIOTT'S OPERATION)*

JAMES M. PARROTT, M.D., F.A.C.S., Kinston

Indications

Elliott's operation can be done with reasonable hope of fair success for any condition indicating an iridectomy; however, except in the classes of cases indicated hereafter, iridectomy, in my judgment, is the operation of election. I take the position that coneoscleral trephining is the most desirable of all the operations which have been offered or suggested as a substitute for iridectomy. It is our best hope in the following conditions:

First. In non-congestive glaucoma with a very much contracted field of vision showing a progressive and extensive atrophy of the optic nerve fibers.

Second. So called chronic painful eye (chronic irido-cyclitis), with or without increased tension and with a shallow anterior chamber.

Third. Simple glaucoma.

Fourth. In any case in which an iridectomy has already been done and has failed to relieve pain. Increased tension in acute inflammatory glaucoma is probably due to obstruction of Schlemm's canal. Iridectomy gives amelioration by relieving the obstruction in the canal of Schlemm, provided the iris roots are thoroughly removed. When an iridectomy fails to give relief in such cases the failure is probably due to incomplete removal of the iris attachment. If an iridectomy has been done and failure results, then, even in acute inflammatory glaucoma, an El-

liott's operation may be of service and should be carefully considered.

Fifth. Secondary glaucoma due to dislocation or swelling of the lens. In this condition a paracentesis should be performed one, two, or three times, according to results, and miotics used, together with hot applications, free purgation, rest in bed, in order to reduce the tension as much as possible before doing the trephining. There is special danger from intra ocular or expulsive hemorrhage after any operation except paracentesis looking toward the relief of very high tension, and the patient should be warned of such a possibility. However, since in these cases the eye ball nearly always has to be enucleated, it is the wise and conservative thing to practice trephining before removing the eye ball—a case of, "all to win and nothing to lose."

Six. Elliott's operation should be tried before enucleating the eye ball in absolute inflammatory glaucoma with atrophy of the iris. Sometimes it is a success and by its use enucleation can be avoided. Of course it does not restore the vision in such cases and it is not done for that purpose. This should be carefully explained to the patients lest they be disappointed.

Seventh. Perhaps the most decided and striking field of usefulness of Elliott's operation is in the late stages of chronic inflammatory or congestive glaucoma. Obstruction of the spaces of Fontana around the circumference of the cornea is probably the cause of

*Read before the Onslow County Medical Society, September, 1925.

chronic glaucoma. Here, as in chronic inflammatory glaucoma, the iris adherent to the cornea and on iridectomy simply tears off the roots but does not relieve the obstruction. Elliott's operation theoretically and practically should and does give much better results than simple iridectomy.

Eighth. In the way of a summary it may be stated that corneoscleral trephining is indicated in all cases demanding a posterior sclerotomy, Lagrange operation, or any other substitute for iridectomy.

Operation

Since the operation is fully described in the text books I will not discuss it in detail. I follow the classical description by Elliott.

Comments

First Stage. In making the conjunctival and corneal flap one should be careful to make the corneal split at the center of the area of conjunctival elevation; that the corneal flap need not be over 5 mm. long and 1 to 2 mm. wide—1-2 mm. better; the conjunctival flap should be several mm. longer than it is often made. I think this is a matter of importance. If the conjunctival flap is too short the danger of late infection is markedly increased.

Second Stage. The trephining should be done with a 2 mm. trephine as suggested by Elliott and not with a 1 mm. trephine as suggested by Knapp. A 1 mm. trephine increases the difficulty of the iridectomy and I am just a little afraid that it would provide insufficiently free drainage. I do not believe that it is of any theoretical or practical advantage in lowering the risk of post operative infection. The trephine should be placed with a deal of accuracy as nearly as possible exactly half on the sclera and half on the cornea. If this precaution is heeded and the proper care exercised in handling the trephine several operative complications such as loss of the vitreous on the one hand or the injury to the uveal tract on the other would be avoided to a great extent.

Third Stage. Iridectomy should be done with sharp scissors after carefully and fixedly grasping and withdrawing

the scleral iris plug. The pillars of the iris usually retract even if the coloboma is incomplete. If they do not, they can be carefully and easily replaced with a spatula. This is a matter of importance just as it is to carefully replace the pillars after an ordinary iridectomy. If the coloboma is not complete, the effectiveness of the operation is not reduced at all. The main thing is to remove the roots of the iris.

Fourth Stage. After the iridectomy the conjunctiva should be carefully replaced and the lid carefully elevated while closing. A suture in the conjunctiva is entirely unnecessary. One drop of one per cent solution of atropine should be inserted in the corner of the eye just as it is closed and both eyes bandaged. I think it especially important that both eyes be bandaged and kept that way three or four days. I do not think the first dressing should be removed in forty-eight hours.

Cautions

There are several precautions which I think should be carefully followed, such as:

(a) Care should be taken to bare the sclera. This renders trephining much easier;—a small amount of conjunctiva left on the sclera will prevent an otherwise "perfect day."

(b) A small cotton sponge dampened and squeezed very dry in 1000 to 5000 adrenalin should be used to wipe down the conjunctival flap especially at the limbus, to control a little hemorrhage which develops at that point and to make it easier to see the cornea.

(c) Special care should be exercised to prevent buttonholing the flap. If such a misfortune should happen, in my opinion, if the hole is closer than four or five mm. to the cornea, it is wisest to replace the flap and postpone the operation and do it later at another point on the eye ball. If one exercises reasonable care in hugging the sclera closely and beginning the splitting of the cornea there is no excuse for making a hole in the flap.

(d) Always reduce an excessive tension on a very hard eye by paracentesis, miotics, or even posterior sclerotomy,

before using a trephine, to reduce the risk of expulsive hemorrhage or the loss of intraocular contents.

In conclusion let me again say that I do not think that Elliott's operation should be done in every case where iridectomy is indicated. I believe that iridectomy is the operation of election. I

do believe, however, that of all the substitutes which have been offered, Elliott's is by far the best. I do not wish to be understood as advocating either trephining or iridectomy in those cases where a simple paracentesis together with medicinal treatment will give relief.

THE GENERAL PRACTITIONER AND PERIODONTICLASIA

R. C. WALDEN, D.D.S., Richmond

In beginning this paper, let me state most emphatically that I have no patience with the theory that there is no place in dentistry or medicine for the family dentist or family doctor.

There never has been nor ever will be a time when these two types of men will be obsolete. In our field of dentistry there is need of the specialist or expert in a few of its branches, but in all of these department I believe that the knowledge that experience gives one in general practice is essential to make the first class specialist, or else his viewpoint is too biased for him to give the cooperation that is necessary for the greatest good of the patient. Likewise, I feel that a knowledge of the early symptoms of periodontal troubles is a necessary subject for the general practitioner to be familiar with, so that he can take steps for their cure in their incipency.

Unfortunately, the text-books create, either consciously or subconsciously, in the minds of the students an impression that there is little hope for remedy in these various diseases, as witness, a paragraph of a recent book by Hopewell-Smith: "Next to dental caries, pyorrhea alveolaris has especially attracted the notice of dental surgeons on account of its universality, its controversial character, its obscure etiology, its occasional difficulty of diagnosis, its recondite morbid anatomy, and its usual intractability to treatment."

This type of thought is expressed in other works on pathology by equally creditable authors, and with this thought the student is sent out into the world to begin his life's work with a

handicap that frequently is hard to remove. Because of this literature and thought the student is beginning life with an erroneous idea of the hopelessness of correcting or controlling the health of the periodontal tissues so that many of us, working in this field, have had to throw weight of rebuttal testimony and evidence into the scale to correct this impression.

Preventive dentistry is the popular idea of today and correctly so, but it does not solve all of our problems though a knowledge of its application has improved the health of the structure a hundredfold. This improvement to a large degree is confined to the teeth alone. Good cavity preparation removes the carious portion of teeth and the area of susceptibility as well. The treatment of root canals has reached a high point of success by following any one of the admittedly good techniques. The replacement of lost teeth by good hygienic bridge work of a fixed or removable type has become quite common practice the country over; but all of this does not insure against a subsequent pathology and degeneration of the soft tissues.

It is very true that we all see cases beyond hope or that are stubborn to deal with, but I venture to say that in our field of work we see the successful restoration to health quite equal to that of other fields of professional activity, and our satisfaction in seeing this is a great part of the compensation.

The general practitioner of dentistry should bear the same relationship to the families in his care as the family physician. At the present time, the heads of

families are very receptive of and anxious for information concerning, not only the health of the body as a whole but the oral cavity as well. Therefore, the dentist must fit himself to teach the principles of hygiene and nutrition and should be in position to recommend literature to those who care to read.

Such books as Holt, McCollum and others have written would be of inestimable value to these parents and I have no hesitancy in saying that I, for one, feel that in the final analysis of things, correct diet will prove the greatest of all prophylactic measures in the fields of dentistry and medicine.

However, for the present we are concerned with the health of the periodontium and to have perfectly healthy periodontal tissues they must be born. Too much stress cannot be placed on this; correct nutrition during the prenatal, preschool and adolescent periods of the child will, in a large measure, bring this about where there is a lack of natural resistance which we commonly call inheritance. There is great resistance to be found in well developed and well nourished tissues.

A high resistance, can be produced where the development and nourishment has been poor, by correct diet, by producing a functional occlusion whose action is mechanically correct. You, who are interested in prosthetic work, will know what I mean and by the patient keeping the mouth clean and giving it regularly its "daily dozen" so aptly described by Stillman as "Physical Culture of the Gingiva."

We may assume that well developed and well nourished tissues are related to resistance and I need not remind you of the effect of cavities in deciduous molars on one side, where the food is shifted to the other for comfort in mastication, or where they occur on both sides, causing the bolting of food which causes a complete loss of function as well as producing indigestion with its consequent loss of nourishment.

Modern diet of soft foods which demand no mastication has so lessened the stimulation of function that the maxillae no longer present the correct sized processes with full overlying soft tissues

and the circumference of the arch itself is in many cases reduced far below the normal of our ancestors, thus giving slight resistance to trauma.

The family dentist, having taught the best principles of nutrition and hygiene, should look to it that complete function is preserved or restored, having in mind, in his treatment, not only restoration of lost structure but prevention as related to the patient a few years hence. To meet this, his restorations must truly restore,—anatomically and functionally.

He should always, in his mouth examinations, be on the lookout to discover the very first lesions of the gingival tissues, such as are shown by roughened enamel; increased radiolucency of the alveolar crest or disturbance of its normal contour; increased widening of the perimental space; mobility or slight movement of teeth in travelling; the traumatic crescent and congestion of the marginal gingiva; recession, be it ever so slight, of the marginal gingiva, from its normal line; Stillman's clefts or fissures; absence of stippling; dilatation of blood vessels, both arterial and venous; epithelial nodules; increased depth of the gingival crevice.

Good healthy mucous membrane is a bright pink. Modifications vary from pale pink to red or purple and it is well to look for a healthy portion of the mucosa and compare it with other parts.

These are a few of the early symptoms that the practitioner should be on the lookout for and remove the causes or have them removed. If he does there would be little need for the difficult treatment of advanced cases of so-called pyorrhea. I know that most operators do not care for this type of work, tedious to most of them but if they would now and then do a little of it, see the quick results obtained, I am sure they would be very enthusiastic and even if they preferred sending this work to others, they could be convinced of the good to be obtained.

I would like to call your attention, at this point, to the fact that when you find periodontoclasia developed around one or two teeth and you treat and clear it up, you have not finished your work,

for unless you take steps to prevent it, it will surely crop up in other parts of the mouth later.

In every case, when your patient presents himself, if upon examination, the gingival crevices are found to be abnormally deep or contain deposits, or the gingiva are of improper color, it is the duty of the dentist to treat every gingival crevice in the mouth whether it shows pus formation or not. And it is his duty to make the occlusion as nearly normal as circumstances permit. This does not mean that we must grind through the enamel of good healthy teeth to make a three point contact, or a perfect curve of Spee.

It means that with judicious grinding and with the help that we can trust nature to give us, even where nature has not given us an ideal mouth to deal with, we can insure against further development of disease.

We try to grind the teeth in such a way that normal occlusion will be obtained for the particular individual with whom we are dealing, taking into consideration the anatomy, age and arrangement of the teeth.

Our principal object is to do away with unnatural force or leverage, in other words trauma and torque. In a large majority of cases this can be done by a very little grinding. In grinding, the operator uses a few small stones of different shapes which suit his own individual ideas and technique, finishing with an Arkansas stone to give a final polish which is sufficient. The teeth will be further polished in a short period by the process of mastication.

Instruments to be used are at the discretion of the operator. Some periodontists like one kind, some another; but, in the final analysis, it depends on the skill of the operator, not on any given variety of instruments. Whatever you find you can accomplish the work with, by all means use.

If we can have a gingival crevice, even though deep, thoroughly lined with a good layer of epithelial tissue, we need not worry whether there is re-attachment or not, on all of the denuded cementum. In some cases, as have been proven, we get re-attachment and regrowth of bone to quite a degree.

Surgical interference is necessary to remove all dead tissue and debris.

Any drugs or medicine used are only secondary in their efficacy and used as adjuncts. In very deep pockets we frequently get beneficial results by stimulating the sluggish tissues to a more healthy action. Iocamfen, or 20 per cent sulphuric, are very good for this purpose, but for no other purpose should drugs be used; nor will the ultra-violet rays be of any use except as a tissue stimulant or possibly to control post-operative pain. Another adjunct, sometimes used, is vaccine. In my work I have found no benefit from its use. It is possible that in certain systematic conditions vaccines might have a therapeutic effect.

If the extreme operation of curetting away all tissue forming the pockets,—and it is quite an operation, were necessary to effect a cure, it would be better in my opinion to extract the teeth rather than subject the patient to the after discomfort and leave the mouth in such an unsightly condition. If this was the only alternative, we would be failures indeed.

I hope that this will encourage a few, if not all of you, to study carefully all of the causes of this much dreaded disease, such as faulty metabolism, mechanical irritants and traumatic occlusion and to take steps for the treatment and prevention thereof.

I would advise, if you be interested in this work, that you begin on a few, not too difficult cases, and gradually gain the desired confidence and technique which is within the possibility of you all.

321 West Franklin St.

MARKED REDUCTION OF PULSE RATE FOLLOWING INTRAVENOUS ADMINISTRATION OF GLUCOSE AND INSULIN

Report of a Case

H. J. WARTHEN, JR., M.D., AND J. S. HORSLEY, JR., M.D., Richmond

(From the Surgical Department of St. Elizabeth's Hospital)

Mrs. M. C. W., aged 32, entered St. Elizabeth's Hospital August 4, 1925, complaining of a mass in the left breast. The family history was negative with the exception that her paternal grandmother and a maternal great-uncle died with cancer. The past history was irrelevant. She was married at the age of 22 but had no children. Two months before admission the patient was slightly injured in an automobile accident, bruising her left arm and the left side of her body. The following day she noticed a small lump in the lower inner quadrant of her left breast. As this did not become smaller she was advised by her family physician to come to St. Elizabeth's Hospital. Here she was examined by Dr. J. Shelton Horsley on July the third, who advised immediate operation due to the possibility of malignancy. The patient stated, however, that she could not undergo an operation at that time, and did not return until August fourth.

Physical examination showed a well nourished woman with moderate dental caries, infection of the tonsils, slight enlargement of the submaxillary glands, and blood pressure of 146/84. In the lower inner quadrant of the left breast there was a mass 6 cm. in diameter, hard, irregular and freely movable, but slightly adherent to the overlying skin. It seemed to have increased somewhat in size since the previous examination. There was moderate tenderness on pressure, and the patient stated that it caused a constant feeling of heaviness in that breast. No other masses could be made out, and the axillary lymph were not palpable. The physical examination was otherwise negative.

Urinalysis, blood count, differential count, blood smears, and two-hour phenolsulphonephthalein kidney functional test were normal. The blood Wassermann reaction was negative.

A tentative diagnosis of fibro-cyst-adenoma with the possibility of malignancy was made. The following day, under ethylene-oxygen anesthesia, Dr. J. Shelton Horsley made a transverse incision and removed the growth in tact with a considerable amount of apparently healthy tissue and mammary gland. The specimen was incised, and the growth appeared to have a distinct capsule. A fresh frozen section was made, which, though stained poorly, seemed to show a fibro-cyst-adenoma, with some epithelial hyperplasia and degeneration, but no definite malignancy, and the wound was closed.

In the permanent sections, examined the following day, the epithelium, though degenerated, stained well and showed a distinct carcinomatous growth. In some areas there were cystic cavities without epithelium, while in other cavities the epithelium resembled papillary cyst-adenoma. The fixed gross specimen showed a distinct outline of the growth with thick connective tissue surrounding it, which seemed to be a reaction to the growth and resembled a capsule.

These later findings were explained to the patient who consented to a second operation two days following the first operation. Under ethylene-oxygen anesthesia a radical operation, after the Rodman method, was done by Dr. J. Shelton Horsley. The entire operative field was very vascular, and considerable time was taken in hemostasis. The anesthesia lasted one hour and twenty-five minutes; the operation, one hour and twenty minutes. The pulse was 76 at the beginning, 110 during, and 100 at the end.

The specimen consisted of the left mammary gland with the axillary contents, both pectoral muscles, part of the sheath of the recti muscles, and a considerable amount of fat and fascia surrounding the whole specimen. In the

axillary contents three enlarged lymph nodes about 1-1½ cm. in diameter were found, one of which was suggestive of metastasis; the others appeared to be hyperplastic.

The patient was somewhat shocked following the return to her room, and 5 per cent glucose solution was given by hypodermoclysis. The pulse rate became more rapid and somewhat irregular during the next hour and a half, at which time 5 per cent glucose in Ringer's solution was given intravenously. The blood pressure was 112/70. An ampoule of strychnin was injected intravenously without a material change in the pulse.

The pulse rate gradually increased for two hours during which time 1175 c.c. of 5 per cent glucose in Ringer's solution had been given in the vein through a cannula, the solution flowing continuously, and the pulse rate was 144 to the minute. Twenty units of insulin were then injected through the intravenous tube, and the pulse was recorded every five minutes for the next hour during which time it steadily decreased until it was only 84 to the minute, and regular. It gradually rose after this, but at no time exceeded 124 to the minute, and the volume remained good. Four thousand seven hundred and forty-five cc. of 5 per cent glucose in Ringer's solution and 65 units of insulin were administered during the ensuing 30 hours, at the end of which time the pulse rate was 100, regular, and of good volume. The patient made a speedy and uneventful recovery, the wound healed nicely, and her temperature never rose above 100.2 degrees F. She was discharged fourteen days following the second operation, and recent communication from her family physician states that "she is getting on finely."

Comment

This case presents three interesting features:

1. The early age at which this cancer developed, and its atypical location. Cancers of the breast are most often found in the upper outer quadrant, and only 7 per cent to 10 per cent occur in women under 33 years of age.

2. The mistaken impression the froz-

en section, made during the operation, gave, which was corrected the next day by the permanent sections. While fresh frozen sections are undoubtedly a valuable adjunct to the surgeon's armamentarium, more careful staining in permanent sections should always be done in doubtful cases, especially when the fresh tissues are soft, gelatinous, or degenerated.

3. The reduction in the pulse rate, with a corresponding improvement in the patient's general condition immediately following the intravenous administration of insulin after the glucose solution had been given was very marked in this case, the pulse falling from 144 to 84 within 55 minutes. This has been noted in every instance in which insulin followed glucose intervenously in cases of surgical shock, and we hope later on to give a more detailed report of this interesting observation.

617 West Grace Street.

A COUNTRY DOCTOR DEFINED

If you can set a fractured femur with a piece of string and a flat-iron and get as good results as the mechanical engineering staff of a city hospital at 10 per cent of their fee;

mud to ease the little child's fast dead beat;

If you can drive through ten miles of

If you can do a podalic version on the kitchen table of a farm house with husband holding legs and grandma giving chloroform;

If you can diagnose tonsillitis from diphtheria without a laboratory forty-eight hours away;

If you can pull the three-pronged fish-hook molar of the 250-pound hired man;

If you can maintain your equilibrium when the lordly specialist sneeringly refers to the general practitioner;

If you can change tires at 4 below at 4 a. m.;

If you can hold the chap with lumbago from taking back rubs for kidney trouble from the chiropractor;

Then, my boy, you are a Country Doctor.

H. W. Davis, M.D., Plains, Kansas.

—Journal Kansas Medical Society.

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*A journal for the promotion and diffusion of
usable medical knowledge.*

Doctors of Medicine:

Asleep?;

Indifferent?; or

Afraid?

Some recent developments concerning many of the cults which represent themselves to be competent to care for the sick appear to merit attention.

(a) Chiropractors

In the Journal of the American Medical Association of October 31, 1925, Blaine, of Chicago, reports three cases of forward dislocation of the atlas on the axis, one with fracture; all three apparently the result of chiropractic treatments. Death resulted in one case and the others are left with various symptoms.

Early in 1923 the Chicago papers carried an account of a girl of eleven, suffering with tuberculosis of the cervical vertebrae, dying immediately on being given an "adjustment" in a chiropractic school. Another child of five, supposed to have had bronchopneumonia while being "adjusted" is reported in this article to have suddenly cried out and died.

In his Presidential address before the Medical Society of London, in this year, Sir H. J. Waring, C.B.E., M.S., F.R.C.S., treats of osteopathy and chiropractic. Evidently, in England, as in this coun-

try, the "let them alone," "ignore them," "we cannot afford to take cognizance of them," "they are not worthy of notice," "every knock is a boost," attitude has done nothing but play into their hands. To be silent under assault is usually a confession of guilt.

This address goes into the origin and development of both of these frauds and relates the results of various investigations of their methods. The essential matter is embraced in the following.

In order to be successful it is necessary that free advertising be practiced, since a considerable proportion of the populace are much more prone to believe extravagant assertions contained in display advertisements than the wise counsels given to them by their regular medical practitioner.

Apparently the only essential elementary education which is insisted upon by most of the osteopathic and chiropractic schools is ability to read and write.

Under "Dangers of the Practice of Chiropractic":

Many cases are on record where an osteopath or chiropractor has been called in to treat a patient for abdominal pain, the cause of which pain was appendicitis with abscess. "Treatment" has been applied, the abscess has been ruptured, and the patient has died from acute peritonitis.

Cases of cancer, tuberculosis and acute infectious diseases are cited in which these shysters have, in all, contributed to deaths, and, in some, conveyed infection.

Dr. F. H. Albee is quoted as saying "he has never discovered any foundation for the chiropractic theory," and "he states that propaganda leads people to throw their money away on false promises of health and tends in some cases to delay proper treatment until it is too late."

The President of the Medical Society of London attributes the so-called success of the osteopath and the chiropractor to three factors: (1) the factor of mystery; (2) dissatisfaction with doubtful diagnosis and inability to promise immediate cure on the part of decent doctors; and (3) advertising.

This address advocates instruction in hygiene and physiology compulsory in the public schools, as a means of giving every future citizen a defense against

such ridiculous theories of disease and cure.

(b) *Homeopaths*

From the "President's Address," delivered to Scottish Branch, British Homoeopathic Society, 1923-24:

The past three years have been very important ones in the history of our cause, more important, I think, than we at present realize. During this period the sixth edition of Hahnemann's "Organon," long in obscurity, has been published in English, and its importance has been very ably brought to our notice by our past President. These three years, also, have seen the introduction to homoeopathic circles of the phenomena known originally as the electronic reactions of Abrams. For drawing our attention to these phenomena we are indebted, as you all know, to our energetic secretary, Dr. Boyd, who has so modified and improved Abrams' instrument as to make it practically a new creation.

Abrams introduced his instrument, I believe, as a diagnostic machine. Let me say a little about the emanometer from the standpoint of diagnosis. The emanometer is an instrument by means of which we can pick up, differentiate, and measure certain forces which emanate from practically all substances, including—the thing which interests us at the moment—animal secretions. These emanations are probably of the nature of ethereal waves, and are picked up by the emanometer acting in a way similar to a wireless receiving set. The waves are recognized by their producing areas, dull to percussion, on the abdomen of a human subject in contact with the instrument, and are differentiated in three ways—firstly, by the position of the dull area on the abdomen; secondly, by the reading (or tuning) in the emanometer at which the dull area appears; and thirdly by the size and shape of the dull area itself.

Abrams had a large atlas of different areas, while the emanometer notes for its present technique, over eighty different waves. How many more have still to be discovered of course no one knows.

From "The Presidential Address delivered to the British Homoeopathic Congress held at Bournemouth, September 25, 1925":

He (Hahnemann) had become disgusted with the errors and uncertainties of the prevalent methods of medical practice and hoped to discover if God had not indeed given some law by which the disease of man could be cured with certainty.

Further:

Hahnemann had been a bitter enemy to bleeding all his life (sic.) He of course

opposed it in cholera, . . . although he had not seen a case.

Next from the same article.

Sir Clifford Allbutt says "at this moment it is revealed that medicine has come to a new birth." Not before time, in our opinion! He continues, "What is, then, this new birth, this revolution in medicine? It is nothing less than its enlargement from an act of observation and empiricism to an applied science founded upon research; from a craft of tradition and sagacity to an applied science of analysis and law; from a descriptive code of surface phenomena to the discovery of deeper affinities; from a set of rules and axioms of quality to measurements of quantity." This sounds very fine, but it "leaves me cold!"

For years homoeopathy has been cold-shouldered by the empiricists of the so-called orthodox school, who had nothing but the above to go upon, whilst a really scientific exposition of disease and its cure lay open to them. How far have they advanced? It was for a French chemist, Louis Pasteur, himself a plagiarist of Bechamp, whose ideas he annexed without acknowledgment; it was, I say, for Louis Pasteur to establish the germ theory. Joseph Lister developed this along the line of antiseptics which saved many lives, and was displaced later on by asepsis.

During the last decade the germ theory has been run to death, in the school of Sir Almroth Wright, and a vaccine is now the cure for the most unlikely ailments.

Have they cut the ground from beneath our feet? I think not. Homoeopathic teaching, literature and materia medica keep pace with the times, and a new and up-to-date edition of Kent's repertory was only published last year.

(c) *Eddyites*

All those who have learned their A, B, C's should read, and all others should have read to them, "The Faith, The Falsity and The Failure of Christian Science,"* by Woodbridge Riley, Ph.D., Lecturer at the Sorbonne, 1920; Frederick W. Peabody, L.L.B., member of the Massachusetts Bar; and Charles E. Humiston, M.D., Sc.D., Professor of Surgery in the University of Illinois.

From the authors' foreword:

The authors of this volume recognize the right of every adult freely to exercise his choice of religious belief and medical treatment. A responsible, conscious adult may employ any form of treatment for his own physical ills, or dispense with all forms. It is his right to suffer, unrelieved by medical

* May be had by enclosing price, \$3.60, to Southern Medicine and Surgery.

skill, and to die, unattended by a medical doctor, if he wishes. This book is written because the authors strongly feel that no one has the right to withhold medical attendance and treatment from any sick and suffering child, or from any adult incapable, because of his condition, of personal judgment. That barbarity should not be permitted. Horrible as are the cases presented, Dr. Humiston deemed some of his discoveries too ghastly for publication in a book designed for general distribution.

The book exposes every phase of this gigantic, heartless fraud. The idea is shown to have been stolen by Mrs. Eddy from one Quimby; the inspiration from Alcott; while her contemptuous indifference to the fate of her dupes was natural to her selfish and abominably unscrupulous character.

In Part II, there are chapters on autocracy, autocrats, suppression, swindling, lies, death and cash. Under "suppression":

A woman of thirty-five years suffering from Bright's disease died in Cleveland, under Christian Science treatment, and the "healer" was prosecuted for practicing medicine without a license. He was convicted and fined one hundred dollars. The testimony at the trial showed that, until five weeks before her death, the woman had been under medical treatment, consisting mainly of diet and regulation of bodily functions with a view to comfort and the prolongation of life. With the beginning of Christian Science treatment, she was advised by her "healer" to eat, and did eat, anything she liked, amongst them things deadly to a person affected as she was; and the regular functioning of the body was completely ignored. The consequence was that, during the five weeks of the "healer's" treatment, which terminated in her death, her bowels were relieved but once and her condition, as a witness testified, was "too horrible to describe."

Attend the next paragraph, which is even more startling:

As a result of the activities of the local Christian Science Committee on Publication, no newspaper in Cleveland published any report of the trial, the testimony or the conviction. Precisely the same thing is done, or attempted, wherever and whenever possible.

As regards the character of Mrs. Mary Morse Baker Glover Patterson Eddy there is marked difference of opinion. Perhaps one of the strongest contrasts is between the opinion of that honest soul, Mark Twain, and the avari-

cious, mendacious old vixen's own claim for herself. Said Mark: "That shameless old swindler, Mother Eddy": Said Mary: "I am as pure as the angels."

Of no one else can it so well be said:

She plumbed to the depths the credulity of the human mind, or rather, found it to go beyond the plummet's sound. No one ever tested more thoroughly, and she found no absurdity beyond its scope.

The chapter on "Lies" gives documentary evidence of Mrs. Eddy's entire disregard of truth as regards her ancestry, her means of coming by her "system," her designation as "mother," her claims as to cures of tuberculosis, caries and cancer and her religious pretensions.

The chapter on "Failures" cites specific cases and gives them in detail.

From the "Conclusion":

Christian Science is an assassin of humanity. To every form of human misery, it brings its one offering—arrogant, boastful, criminal ignorance. It obtrudes its hateful presence between suffering humanity and the only known means of relief. It supplants surgery with sorcery and tender solicitude with brutal neglect. With hostile mien it stands guard against curative medicine at the bedside of childhood while death strikes down the helpless babe. Christian Science is the advance agent of scourge and pestilence, the ally of smallpox and consumption, the confederate of appendicitis and typhoid fever, and the executioner for cancer and intestinal obstruction.

Again every victory of scientific medicine, Christian Science makes angry protest. Every advance in preventive medicine is fought through in the face of virulent opposition from this miserly-fisted parasite.

Highwaymen demand: "Your money or your life." Christian Science, beguiling with siren smile, deluding with false promise, takes — YOUR MONEY and YOUR LIFE!

(d) *Physical Culture*
a la Bernarr MacFadden

A few days ago the editor received a communication from this source stating that a credit memorandum enclosed would be accepted as cash for the sum of \$2.00 on a subscription to Physical Culture Magazine. It was one of those wonderful "Dear Friend" letters, and stated that the reason this concession was made in my favor was "because you live where you do."

The remarkable subtlety of this line of approach might have disarmed suspicion had not my eye caught this, on an enclosed folder, "Bernarr MacFadden says, 'You and your family can enjoy glorious, radiant health—but it can come only through knowledge, such as you will find so clearly presented in the pages of this book.'" And his folder goes on to say, "The world's greatest doctors helped to write this book for you—Such men as R. L. Alsaker, Harry B. Gallatian, Lincoln Graham, Thomas Clark Hinkle and others of equal note and prominence in the medical world." He states that practically every disease condition is covered in the new book; from pimples to pneumonia; from tonsils to tuberculosis, Benarr MacFadden, assisted by this corps of doctors whose fame is nationwide, advises you and tells you how you may "enjoy glorious, radiant health," and he sends along a circular bearing illustrations, in disgusting attitudes, which would probably appeal to those whose ideals of physical perfection would be represented by a healthy boiler-maker or washerwoman!

(e) *Naturopaths*

The following is copied from a recent issue of a Rocky Mount, N. C., newspaper:

Are You

SICK?

Do You Want Relief?

Then see Dr. A. S. Rowell, who will guarantee to relieve you or refund your money. Did you ever know a doctor before who did that? I positively cure Diabetes, Lumbago, Sciatica, Rheumatism, Constipation, Female Troubles and most diseases arising from the spine. I can reduce or raise your blood pressure, cure Asthma. Have positively cured 52 cases Tuberculosis in the last 12 months and 106 Cancers Headaches and pain relieved in one minute. If you are suffering come in today. Examination Free.

References Gladly Furnished

A. S. ROWELL

Doctor of Naturopathy

Phone 1682 Office in Kiser Drug Store

DISCUSSION

(a) Is it not more than a little strange that so few of the entirely unnecessary tragedies ensuing on chiropractic treatments find their way into the daily papers? So many cases as cited, and of a particular kind of killing; to wit, by dislocation of the spine, occurring in one city, indicates clearly that such catastrophes are taking place elsewhere, even right around us. Why do we not see them related in our morning and evening papers? If a regularly educated medical doctor has the misfortune to have a patient die under an anesthetic or while an injection of arsenamine or serum is being given, it is exceptional for an account not to find its way to the front pages, even though it can be clearly shown that this does not occur once in ten thousand cases.

And do not these authentic cases from Chicago, furnish evidence sufficient to convince some of the deluded followers of these charlatans that they are not patients, but victims; that they are not manifesting superior intelligence, but demonstrating their gullibility?

Do we flatter ourselves that these cults are exerting no great influence, and that this is on the decrease? Look around. A survey in one of our largest cities disclosed the fact that more than half of the homes were arrayed against us. A handful of chiropractors put to rout the high, proud and mighty regular medical profession of North Carolina when this tribe obtained recognition by the Legislature of this ostensibly civilized State. Why? Because nine tenths of us were asleep, indifferent or afraid? It would be too much of a humiliation to admit that a dozen or two nobodies from nowhere have beaten us in a battle in which we were interested and out in force.

The temperate discussion by Sir H. J. Waring is abundant evidence of the calmness of the Briton. His suggestion as to instruction in elementary hygiene and physiology in the public schools is eminently wise. Few boys and girls who have seen how the spinal column is put together would ever believe the silly

twaddle of a chiropractor, however well-sleeked his hair, smooth his tongue, or gorgeous his "diplomas."

"Ignorance is the curse of God:

Knowledge the wines wherewith we fly to Heaven."

(b) The homeopaths have come into some singular relationship with the regular doctors. They started out by denouncing us in unmeasured terms, then gradually moderated their open attacks to whining appeals for "broadness" and "tolerance" toward "another school of medicine." They termed us allopaths, a name which, in so far as it has any meaning at all, is a rank misnomer. They contend before the world that we adopt a principle of treatment based on an opposite contention to their *similia similibus curantur*. We have done no such thing. We have always used every means for cure or relief which had demonstrated its power for good, whether or not we could determine its mode of action; and we, and we alone, have worked out and extended the application of the principles.

It can be seen from the quotations that the homeopathic "school" has not changed its methods. Its followers call us brothers when something is to be gained thereby, but denounce us as futile or dangerous at all other times.

Their recent espousal of the Abrams fraud, which has been so thoroughly exposed by the Scientific American, should restrain any of us who might be disposed to allow the conspicuousness of Brig. Genl. Sawyer or Senator Copeland to dazzle our eyes.

(c) Those whose minds are so strangely adjusted as to enable them to believe in the hodge-podge of every kind of nonsense put out by Mrs. Eddy and her successors, who can look at a cancerous breast, a lung eaten in holes by tuberculosis, or a child choking to death with diphtheria, and still say that there is no such thing as physical disease;—some of these will turn in loathing from the faith promulgated by so unfeeling a wretch as Mary Eddy is shown to be.

Do you say these things are slanders? The courts are open and the authors

are responsible persons; why are they not prosecuted?

Will doctors of medicine complacently tolerate this "miserly-fisted parasite" which fights scientific medicine at every turn and prevents the newspapers of a great city from publishing accounts of its murders in the name of Religion and Science?

(d) Just now the physical culturist is loud in the land. Is there any other profession than medicine, to whose members an individual, ignorant of everything except the credulity of the race and the easy-going folly of doctors, would dare write letters containing such obvious lies about matters with which every member of that profession should be acquainted? Think of the effrontery, the insolence of "Bernarr MacFadden (who was probably born John Smith or Tim Finnegan) says, 'You and your family can enjoy glorious, radiant health—but it can come only through knowledge, such as you will find so clearly represented in the pages of this book.'

Of the four "World's Greatest Doctors, who helped to write this book," two can not be found in the best Medical Directory published this year; and the other two are graduates of colleges which never had any high standing and are now extinct.

The mails are supposed to be closed to schemes to defraud one of his money; why not close them to schemes aimed at his life?

(e) The naturopath is a relatively new blight on civilization; but his ways are old and well-known. Like his brothers in iniquity, he fattens on the ignorant and credulous sick to whom he gains access through his friends and partners among the newspapers. This one says he has, "positively cured 52 cases of tuberculosis in the last 12 months and 106 cancers." That would be only an idle tale were it not carried by unscrupulous newspaper publishers to homes or institutions in which there are victims of these diseases. It is needless to attempt to put into words the effects produced in some cases;—the false hopes, the mortgages, the wasted means, the disappointments, the black despair!

FINALLY

What are we going to do about it? We have the evidence and are better qualified to act on it than any other group of men. Will not acquiescence make of us accomplices? We have tried non-resistance—and it is bringing us to the sad state of the Apostle of this method, one Ghandhi.

This Journal is for Militant Measures.

Our submission is reasonably taken by the general public to mean that we are unable to refute the claims of these cults, or to disprove their charges against us. Whence comes our meekness under charges? Let us attack before they are more firmly entrenched; before their slush fund has established contact with too many of the makers of our laws, and gained the support of too many of our "for sale" newspapers; before they become so emboldened by the favor they find in legislative halls and newspaperdom as to undertake to regulate us.

Let us not merely go to battle with these ghouls who demand of children, women and men, "YOUR MONEY AND YOUR LIFE"; let us declare War, and fight it out to a finish.

The Department of Internal Medicine

Since the taking over of this journal, a year ago, the editor has recognized the need for a strong Department of Internal Medicine. Now he is assured of the development, under the editorship of Dr. Paul H. Ringer, of just such a department as will serve and please the doctors of the State.

Without disparagement to any other branch of medicine, we confidently assert that this is by far the most important division of the healing art. It is the broadest of the so-called specialties, requiring the best-balanced mind and the most diversified training for the discharge of its duties.

The Journal felicitates its readers on their privilege of having, from month to month, material from the pen of so competent and so interested an Internist.

The Tri-State.

The object of this Association shall be: the advancement of medical science, the elevation of the profession and the promotion of all means for the relief of suffering humanity. Article I of the Constitution of the Tri-State Medical Association of the Carolinas and Virginia.

This Association can fairly claim to have lived up to this pronouncement. Medical politics in the sense of maneuvering for office, has had only a small place in its activities. It now meets, gets down to work, has its scientific sessions, elects its officers and adjourns. In the intervals between meetings it concerns itself with every movement which tends to promote the public health and to increase the usefulness of the medical profession.

Probably a bit more of interest and activity on the part of the whole profession, in general politics, would be advisable, and in this movement the Tri-State could well take the lead. We have rather prided ourselves on taking no part in politics, while the chiros, osteos and Eddyites have energetically exercised their influence; and the net result is a situation which we can not afford to view with complacency.

It appears that we have observed the admonition to be "harmless as doves," but ignored the beginning of the sentence, "Be ye wise as serpents."

Frequently, in conversation with doctors from various parts of the country, we learn that some individual in our profession has, singlehanded, either changed the vote of a legislator on some measure hostile to medicine and the public health, or elected in his stead a man of sufficient intelligence and probity to defend scientific medicine against the attacks of every variety of charlatan.

The State Medical Association of Texas has taken a definite stand in favor of active war on all these cults. The Tri-State has a great opportunity to take the leadership in a similar movement in this section for repeatedly reminding the public of what has been done for it by regular medicine, and flatly telling candidates for legislative office that we will not permit the election of men who attempt, directly or indirectly, to hamstring us in our labors for the Public and Private Health.

DEPARTMENTS

INTERNAL MEDICINE

PAUL H. RINGER, S.B., M.D., *Editor*
Asheville

The Liver

The liver, an essential organ in our economy, is as yet but poorly understood physiologically, pathologically and functionally; but much research and clinical work is striving to place its functions, and its diseases on a basis as sound as that now occupied by the kidneys and the pancreas. A symposium held before the Sections on Pathology and Physiology, Gastro-Enterology and Proctology at the Atlantic City meeting of the American Medical Association last May, attempted very successfully to place before the profession the present status of our knowledge of the liver—a knowledge still very blurred and hazy in spots—but in which certain definite factors are standing out clearly amid the rather generalized mistiness. It is my object to condense some of these facts and theories for the readers of *Southern Medicine and Surgery*. It is not the privilege of the rank and file of practitioners to have constant access to research laboratories or large fully equipped clinics, but it is their duty to be informed of the essential facts that proceed from centers of research and of clinical investigation.

As in the case of many other organs,—the lungs, kidneys, etc., liver tissue is over-abundant for the necessities of life. Fifteen to twenty per cent of the normal quantity of liver tissue suffices to meet ordinary bodily needs. According to Carlson, this organ has a connection with the phenomenon of blood coagulation, as fibrinogen is produced in the liver. Mann and his associates seem to have shown by total liver extirpation that this organ is the main agent that forms urea and destroys uric acid. Interesting facts are brought forth with respect to the long-known function of the liver, that of glycogen storage. In severe diabetes mellitus or in experi-

mental diabetes following total extirpation of the pancreas, the liver cells practically lose their ability to store up glycogen, despite the high sugar content of the blood. This type of liver failure may be present without evidence of serious impairment of other liver functions. The fact that the liver can again store glycogen on administration of the pancreatic hormone, insulin, is an illustration of the reciprocal dependence of liver cells or hormones on substances produced in other parts of the body. A direct chemical analysis of fats formed in the liver, at least under certain conditions, seems to show that the liver desaturates fats. An interesting relation between glycogen storage and fat storage in the liver is that when the liver glycogen is decreased, fat storage is increased.

It is unquestionable that the formation of bile is both an excretion and a secretion. The excretory role is well shown by the number of substances artificially introduced into the body which appear in the bile. As an instance may be cited phenoltetrachlorophthalein which is excreted exclusively by the liver. This dye forms the basis of one of the best known tests of liver function. Be it noted, however, that it can do no more than give an idea of the liver's *excretory function only*. After total extirpation of the liver, Mann has shown interesting modifications in physiological processes. The blood sugar at once begins to fall and symptoms typical of hypoglycemia set in. Injection of glucose, even in the moribund animal, at once restores its condition to normal. This can be repeated several times, but progressively larger amounts of glucose are necessary to keep the blood-sugar above the hypoglycemia level. Finally another group of symptoms, quite different from the first, supervenes and the animal dies regardless of the amount of glucose administered. The cause of the second group of symptoms is unknown

and Mann does not give them in detail.

While no explanation of the cause of the hypoglycemia after hepatectomy can be given at present, it is certain that at least part of the lost glucose is used for the maintenance of metabolism, and in all probability, the symptoms of hypoglycemia are directly due to the loss of the available food stuff. If both liver and pancreas are removed at the same time, no different results are noted from those appearing after removal of the liver alone. The glycogen content of the muscles of the hepatectomized animal was found to decrease while the blood sugar was decreasing and to increase after the injection of glucose.

Protein metabolism is greatly modified by the removal of the liver. Urea production and uric acid destruction cease at once and the amino acid content of the blood increases. It has been shown by exhaustive experiments that the liver is not essential to the formation of bilirubin. There is no significant change in cholesterol and no definite data have been obtainable with regard to the bile salts.

Forsaking purely physiological and pathological considerations and coming to the clinical side of the matter, Greene gives many interesting facts concerning the clinical use of tests for liver functions. He points out that Van den Bergh's test for bilirubin in the blood serum of jaundiced patients has the following points of usefulness:

1. It estimates the degree of retention of bile in patients with obstructive jaundice.

2. It furnishes a quantitative index for the degree of jaundice observed in various toxic or infectious types.

3. It enables the clinician to follow the course of jaundice due to any cause.

4. It demonstrates the presence of latent icterus.

The value of determining the presence of latent icterus is shown as follows:

In 1. Pneumonia

2. Exophthalmic Goiter

3. Toxemia of Pregnancy

4. After chloroform or arsphenamin administration.

In this group bilirubin values predict the onset of Toxic icterus with its important prognostic value.

In 1. Heart disease

2. Emphysema

3. Arterial Hypertension

In this group rising levels of serum bilirubin foreshadow passive liver congestion because of myocardial failure.

Following biliary colic serum bilirubin is always elevated though not enough to give an icteric tinge to the skin. In these cases the test becomes absolutely diagnostic of the underlying condition. The conditions mentioned above, among the most common acute and chronic conditions met with in general practice, emphasize the importance of this test, and argue for its more general use.

The phenoltetrachlorophthalein test, on the whole better known and more employed than Van den Bergh's test, is also of clinical usefulness. Case of cholecystitis without jaundice show only the slightest degree of dye retention. With the development of jaundice there is marked retention of the dye in the blood-stream, while subsequent to the relief of obstruction there is immediate decrease in dye retention.

Marked dye retention is also seen in

portal syphilitic biliary)	cirrhosis
infectious or catarrhal icterus		
pneumonia		
exophthalmic goitre.		

Positive serum bilirubin and phenoltetrachlorophthalein tests are of much greater value than negative tests. Normal serum bilirubin and absence of dye retention will not exclude hepatic disease.

Opie draws some distinct and valuable conclusions with regard to the role played by the liver in relation to intoxication and infection. Some of his points will be summarily stated:

1. In almost all vertebrates the liver removes insoluble foreign particles from the circulating blood within a short time after injection. (Manganese dioxide

was the substance used in experiments to demonstrate this property of the liver.)

2. Bacteria are deposited in abundance in the liver soon after injection.

3. The activity of this function of the liver increases with the degree of immunity enjoyed by the animal.

4. The liver removes from the portal blood many injurious agents which enter from the gastro-intestinal tract and prevents their entrance into the systemic circulation. (This is of course a well known fact.)

5. The fixation of injurious substances may cause destructive changes in the liver and permanent lesions of the organ.

I have tried to present some of the main observations and facts deduced and adduced from recent liver studies, begun and continued from many angles. The task has not been easy. One is in a quandary what to put in and what to leave out. The whole subject is still in the budding stage. Much has been cleared up; enough to show quite definitely how much still remains to be discovered.

Earnest workers, both research and clinical, are giving so much time and effort to liver problems that in the course of the next few years knowledge on this important organ should be developed and crystalized so that the results in practical clinical medicine will be available to all and a further addition be made to our clinical knowledge in the diagnosis and treatment of disease.

SURGERY

A. E. BAKER, SR., M.D., *Editor*
Charleston

The Gall Bladder

In the treatment of the diseases of the gall bladder, there is no rule to be followed and it is not a question of medical treatment as opposed to surgical treatment. If a diagnosis of cholecystitis is made the patient should be kept under careful medical supervision for a time. During this period, focal infections should be radically removed, gastro-intestinal function carefully regu-

lated, the diet supervised, drugs should be administered as indicated. If such measures should fail then cholecystectomy is indicated providing conditions are favorable.

In a recent paper in *Ann. Surg.*, C. H. Mayo writes on "Gall Stones and Diseases of the Gall Bladder." The following is an abstract:

The gall bladder is a sac with a capacity of from 0.75 to 1.5 oz., which is connected with the delivering bile duct and is developed from the same mass of cells as the stomach, duodenum, and pancreas. Four layers make its structure: the mucous, the muscular, the elastic, and the serous. Bile drawn from the gall bladder is approximately ten times as concentrated as bile in the hepatic ducts secreted in the liver. The gall bladder not only concentrates bile, but also adds mucous to it.

Mann placed a cannula in the gall bladder and another in the common duct and found by means of pressure gauges that the gall bladder undergoes contraction with an increase in the fluid tension but without change in the pressure of the common duct. Injected in quantity into the blood of animals, streptococci with a selective affinity for the gall bladder produce gall bladder disease in a high percentage of cases. Repeated injections at intervals cause marked destruction of the gall bladder mucosa and structural changes.

With or without stones, adhesion of the gall bladder to the omentum, duodenum, or colon is usually caused by gall bladder disease. Cholecystitis is now considered the essential and primary disease, gall stones being secondary to certain forms of cholecystitis and not found in all types or dependent upon the degree of inflammation.

Gall stones are found in approximately 70 per cent of cases of gall bladder disease. In the remaining cases the condition is strawberry gall bladder, papillary gall bladder, and inflammatory gall bladder with mucus and thickened bile.

In cholecystitis there are definite reflex symptoms referred to the stomach at fairly definite periods, usually within thirty minutes after eating. There is also marked qualitative dyspepsia caus-

ed by the retention in the stomach of gas producing and greasy foods, the so-called indigestion with pylorospasm. The tenderness is due to a local peritonitis or an inflamed gall bladder which is overstretched by spasm of the sphincter of Oddi.

Primary cancer of the liver usually begin in the gall bladder or ducts around an impacted or nearly fixed stone from two to six years after the gall-stone attacks have ceased. It may be suspected in a patient with a painless jaundice and a history of gall-stone colic.

When the gall bladder and ducts are diseased, the liver becomes darker and rougher, and the acute angle, or axe edge, largely or completely disappears. With a greater degree of gall-bladder infiltration, local cirrhotic areas develop which usually are shown by white lines radiating out on the surface of the liver from the attachment of the gall bladder and outlining the spreading lymphatic area from the gall bladder to the liver.

When functioning, the liver secretes about an ounce of bile an hour. Between digestive periods the gall bladder concentrates the bile. If the common duct of a dog is ligated under anesthesia and under aseptic conditions, jaundice will not develop for three or four days; the gall bladder filters out the fluids from the bile and brings about a greater degree of concentration. If the gall bladder is removed under similar conditions, jaundice appears in twenty-four hours and bile salts appear in the blood in three hours. The sphincter of Oddi encircling the common duct outlet maintains the tension of the duct and is probably concerned mechanically in the passage of a part of the total bile into the gall bladder for concentration.

Cholesterol forms from 25 to 30 per cent of the blood fat and lipoids and is found in the bile. The suprarenals and the corpora lutea of the ovaries are believed to be concerned in its production. Bile contains fat, cholesterol, and bile salts; also bilirubin which is probably not formed in any quantity by the liver but is withdrawn by the liver from the blood. The calcium is held as calcium bilirubinate and calcium carbonate.

Hepatic duct stones are composed of bile salts, bilirubin, or carbonate of lime, and a smaller quantity of cholesterol.

Nearly 80 per cent of gall bladder diseases now recognized occur in women. Approximately 80 per cent of women with gall bladder disease have borne children and had the first attack during pregnancy or soon after childbirth. During pregnancy, cholesterol is found in excess in the blood stream.

The gall bladder should be removed to eradicate the disease unless the attack is very acute, the illness is very serious, or acute pancreatitis or some other organic disturbance is present. If the gall bladder looks normal and contains a single pure cholesterol stone or if the patient is of advanced age, cholecystostomy with drainage may be substituted. This operation is not so effective as cholecystectomy as it does not relax the sphincter of Oddi.

At the time of operation the condition of the pancreas should always be noted as pancreatic inflammation is usually secondary to disease of the liver, gall bladder, and bile ducts, and may manifest itself months after the operation by pancreatic colic and pain in the back not unlike that of the original attack.

Although the author has not noticed any apparent defect in function traceable to absence of the gall bladder, he believes that this organ is in part a true gland which long ago, like the tonsils, may have had an important function in protecting the body against certain foods or toxins. The gall bladder is apparently a filter of concentrated bile passing to the blood stream through the lymphatics.

ORTHOPEDIC SURGERY

C. J. MEIER, M.D., *Editor*
Charlotte

End Results

Some abstracts are taken from a highly interesting article on "End Results in Neuro-Surgery, 1913-1923," by Dr. Wm. Sharpe, of New York City, in *Annals of Surgery*, for November, 1925. Here the fields of orthopedic surgery and neuro-surgery overlap. The entire article is not dealt with, though the ex-

tre frankness of the author in his reference to expectations and end results throughout is wholesome and helpful. He discourages statistics made on one case and encourages taking time before making final deductions as to results. He mentions the tremendous advance made in neuro-surgery during the past twenty years.

Some interesting things the author says:

The neurologist, by improved methods of examination, is making possible earlier diagnosis and more accurate localization of the lesion, and the surgeon, by understanding at least the principles of neurology and the anatomy of the central nervous system, knows what can be done and what cannot be safely done surgically and in this manner the catastrophes of the past are being avoided.

If the condition of the patient cannot be benefited by the operative procedure, the surgeon should by no means make the condition worse.

Improvement is the result to be desired and strived for, but rarely can the word "cure" be used; when such a happy result is achieved therefore, it is usually heralded and such cases are reported in the literature to an extent that these successful results are considered much more common than is the case, and indeed it is most rare for a patient having had a neuro-surgical condition to regain his former normality.

The most discouraging field in neuro-surgery consists of brain tumor, brain abscess and the condition of internal hydrocephalus.

The encouraging field of neuro-surgery consists of the larger number and of the more frequent neurological conditions amenable to surgery—trifacial neuralgia, spinal cord lesions, peripheral nerves, external hydrocephalus and brain injuries.

In the surgery of traumatic lesions of the peripheral nerves, the best results have been obtained in the end-to-end anastomoses as soon as possible after the severance, that is, the emergency operations. The greater danger of infection in these cases is more than offset by the excellent end-results as compared with the chronic cases. The farther from the spinal cord the anastomosis, the better has been the end results, and yet it was rare to obtain a complete recovery of sensory and motor functions in the chronic conditions.

Traumatic lesions of the brachial plexus occurring at the time of birth are apparently due in a large percentage of the cases to a simple overstretching of the nerve roots of the plexus, so that an early complete recovery of function is possible

within three to six months after birth. But in those cases where one or more branches of the plexus are torn and their ends separated, then in many of these cases at least a recovery of function does not occur and the earlier the end-to-end anastomosis is made, the more complete the end result.

The operative treatment of acute brain injuries in children has only been necessary in 16 per cent. of the patients, whereas in adults the operative treatment was advised in 30 per cent. It may be stated also that children will stand the effects of brain injuries much better than adults, and I believe this is due to the less frequent occurrence of extensive cerebral edema in them.

For years the acute condition of intracranial hemorrhage of the new born has been a pathological study of post-mortem findings rather than their clinical recognition and, therefore, limited to a consideration of gross lesions and of extreme forms of intracranial hemorrhage of sufficient amount to cause the death of the baby. One hundred years ago, Denis,illard and Cruveilhier wrote that one-third of the deaths of newborn were due to intracranial hemorrhage. After Little described his findings, in 1862, and McNutt, in 1885, confirmed this opinion of the relationship of intracranial hemorrhage of the newborn and cerebral spastic paralysis, very little attention to this subject of intracranial hemorrhage of the newborn was given in the literature, until the last decade when a greater interest has been aroused. During the ten-year period of 1913 to January 1, 1923, I had the opportunity of examining in consultation and treating 46 newborn babies within the first two weeks, the diagnosis being a serious intracranial lesion, most probably hemorrhage following a difficult labor, with and without the use of instruments. Lumbar punctures were performed on all but two (these two having died before tests could be performed) and free blood, under varying degrees of increased pressure was found in the cerebrospinal fluid of 87 per cent of these patients, tested during the first week after birth. During the second week, and especially later, the lumbar puncture becomes of increasingly less value as a diagnostic aid, the fluid blood usually coagulating within the first ten days.

This method of spinal drainage should be attempted in all but the very extreme cases of extensive intracranial hemorrhage, under high pressure, within the first week after birth. If the cerebrospinal fluid does not become clear or the pressure become normal and remain normal, then the cranial operation of modified subtemporal decompression and drainage should be considered. The ideal time, as we now know, for the spinal drainage of

repeated lumbar punctures is as soon as possible after acute intracranial condition is definitely diagnosed.

In 1923, I became interested in the chronic condition of cerebral spastic paralysis and, in taking careful histories of a large series of patients at two of the orthopedic hospitals in New York City, and then by thorough neurological examinations including the routine ophthalmoscopic and lumbar puncture tests, it was surprising to note that in a small percentage (12 plus per cent) of these patients there were evidences of an increased intracranial pressure of chronic cerebral oedema.

The operative and post-mortem findings have revealed "wet" oedematous brains under varying degrees of increased pressure, and along the supracortical veins in the sulci was a whitish cloudy new-tissue formation, reported pathologically as being the organization-residue of a former layer of hemorrhage which had occurred most probably at the time of birth.

The histories revealed the following data: 81 per cent first children; 72 per cent males; 95 per cent full-term babies; 90 per cent difficult labors; 76 per cent forceps used as last resort; 17 per cent breech deliveries; in 8 per cent pituitrin had been used.

During the first week, the following observations had been made: 64 per cent more drowsy and stuporous than normally; 73 per cent refused to nurse, 78 per cent evincing a lessened normal demand for food; 39 per cent muscular twitchings, especially of orbital muscles and fingers; in 17 per cent general convulsive seizures occurred; in 18 per cent an icteroid appearance was present.

Within two weeks after birth, 61 per cent were considered well and normal, if indeed anything abnormal had been suspected. Within one month after birth, 82 per cent were considered normal.

Within the first year and usually around the seventh month after birth, 79 per cent of the children were not developing as they normally should such as holding up the head and later beginning to sit up, and at this time, within the first year, the development of spasticity of varying degree and type was usually observed. Later the child did not walk or learn to talk within the usual time, and it was this development of a chronic condition in an apparently normal child that was most mysterious, to say the least, and its presence was ascribed to almost every possible cause. In this connection, I may state that the Wassermann test of the cerebrospinal fluid was positive in only one-half of one per cent.

The treatment of this chronic condition of cerebral spastic paralysis depends entirely upon the presence or not of an in-

creased intracranial pressure: (a) Without a definite increase of the intracranial pressure and, therefore, the cerebral damage having already occurred, the treatment is limited to the various orthopedic measures and to mental training. To lessen the spasticity, numerous peripheral nerve operations have been devised, and recently even the severance of the paravertebral sympathetic ganglionic chain—an operative procedure of no real value in my six cases.

The prognosis in the treatment of these chronic patients depends chiefly upon the age of the patient and the severity of the intracranial lesion. The younger the child at the time of the lowering of the increased intracranial pressure, the greater the improvement to be expected, but not one of these chronic patients can be expected to become normal as though the hemorrhage had never occurred, no matter what the treatment, because the treatment of these chronic conditions is always a late treatment. The ideal time for the treatment of brain injuries of the newborn, just as in brain injuries of adults, is at the time of the acute condition, when the intracranial hemorrhage itself can be drained—in the adults after the period of initial shock has subsided and in the newborn within a period of one week.

MENTAL AND NERVOUS

JAMES K. HALL, M.D., *Editor*
Richmond

The Origin of Drug Addiction

Mental Hygiene (which by the way, is an excellent medical publication) for October, 1925, carries a splendid contribution by Dr. Lawrence Kolb on "Pleasure and Deterioration from Narcotic Addiction." The author is a surgeon in the Public Health Service attached to the Hygienic Laboratory in Washington. His study deals especially with those addicted to the use of opium in some form, to those addicted to cocaine, and those in whom there is addiction both to opium and to cocaine. Many, he finds, have come to the use of one or both of the above drugs in an effort to get liberation from alcohol. Dr. Kolb thinks of the addict as an unfortunate in search of relief, whose last state is worse than that from which surcease was sought. Every individual in any sort of discomfort, physical or mental, thinks himself entitled to measurable comfort. The discomfort of hunger leads to the search for food; thirst is

relieved by the inhibition of water; fatigue tends to disappear after rest, and pain or discomfort goes away, whether it be in the physical or in the mental or nervous domain, after opium has been taken. So the habit, so-called, arises.

The world is peopled by two classes of folks, the normal and the abnormal. The former class, it is hoped, predominates, and dominates, but the latter class is not small. In it are included, of course, the insane, but many others who are not insane, but who are out of tune in one way or another with life around them. They are not comfortably adjusted to their particular niche in the universe. Some of them are in physical pain or discomfort, e. g., the rheumatics, the asthmatics, certain cardiac cases, and others who have other chronic physical disorders. Many others are in discomfort perhaps because of their particular nervous make-up. The mere impingement of living upon their nervous and mental mechanisms is unpleasant. In an environment in which normal people find it possible to live in peace and happiness some others experience only distress, discomfort, and dissatisfaction. They are called psychopaths. They are constantly seeking peace, and pursuing it, and many of them, unfortunately, either accidentally or wilfully, discover the soothing influence of opium.

Out of this latter class come most of the drug addicts. The careful physician is cautious in the use of opium for the relief of physical pain. Such legitimate use of the drug even for a brief period may establish the addiction. Once I was called upon to treat an addict, who had in acute form malaria, articular rheumatism, and syphilis. The patient's mind was apparently turned from the drug after the triple cause of his suffering had been eliminated. But in many chronic ailments permanent withdrawal of the analgesic is not easy because the physical discomfort continues. Kolb thinks of the use of opium bringing about either negative or positive pleasure. The relief from physical pain restores the normal, or negative, state of feeling. In many psychopaths, however, who are never comfortably adjust-

ed to their world, the use of opium gets a positive feeling of pleasure, unknown to them when not under the influence of opium. When comfortably narcotized such individuals live in a world from which reality has been largely replaced by a seductive sort of unreality, in which there is absence of discomfort, distress, and worry. These are the individuals who are unwilling or unable to let the drug alone after they have been got into apparently satisfactory condition from proper treatment. The naked, harsh, everyday, real world is not pleasing to them. They prefer the world of unreality created by the mental effect of opium. What, then, is the physician dealing with in such a situation—merely a chronic drug poisoning, or an abnormal person made still more different by the use of a powerful substance? What are the results of the long-drawn-out use of opium? Kolb's observation and experience do not lead him to the adoption of the belief that opium is necessarily destructive to the physical organism, to the moral tone, or to the intellect. All of us know addicts who have used morphine for years, yet who remain in tolerable physical condition, who do their day's work, who remain mentally alert, and who occupy places of esteem and affection amongst their friends. A very unstable person has probably become somewhat stabilized on account of the seductive action of opium. The stress and strain of living has in some instances probably been lessened. And occasionally an alcoholic has been picked up out of the gutter by opium. But ruin must come to thousands where permanent help comes only to one. And the ruin comes not through damage to the cells of the body, so far as we know, but by the changes wrought in the personality of the addict. Striving after the higher and the better and the necessary things of life lessens, and finally it tends to cease. The opium addict becomes cowardly about pain and discomfort, his *summum bonum* becomes not accomplishment, but a comfortable and pleasant state of existence. All other things gradually become inconsequential. His feelings become his world, and if they be satisfactory there is less

and less thought about that other life that normal human beings live for. Kolb things the effect of opium on a nervously and mentally stable person is different from the physiological action produced in an abnormal individual, and consequently the stable person has little desire for the feeling begot by opium.

Cocaine is injurious in its long-drawn-out use both to body and to mind. Its action is not only perverting, but actually destructive.

Kolb says nothing about the efficiency of the statutory enactments that have to do with the use of drugs and alcohol, but one can hardly help wondering about the soundness of legislative philosophy that deals mainly with the symptomatic manifestations of nervous or mental instability.

UROLOGY

A. J. CROWELL, M.D., *Editor*
Charlotte

The Development of Genito-Urinary Surgery as a Specialty: Third Article

In no phase of medicine has there been greater progress made than in that of prostatic surgery. Twenty-five years ago the fatalities following prostatectomy were about twenty per cent (20%); today, it is from one to two per cent. This is the result of years of experience and scientific research. Experience has taught us that careful preparation of the patient for operation and post-operative care are of utmost importance. It has shown the importance of giving sufficient time following the relief of pressure by bladder drainage for the kidney to react and become functionally stable.

We owe Rowntree and Geraghty a great debt of gratitude for services rendered in the discovery of a kidney function test, which enables one to ascertain definitely when the kidneys' function is sufficiently good to justify us in operating or refusing to operate in a given case. It gives a definite index to the kidney damage and its extent. This, and an estimate of the blood non-protein nitrogen, are good guides as to the operability of a given case and definitely influence the ultimate results. Twenty-five years ago, no such knowl-

edge was obtainable and our fatalities following prostatectomy were fearful.

During this developmental period, a fierce battle raged between the advocates of each operation as to the advantages of the supra-public, versus the perineal route. The latter procedure was championed by Young and his followers, and the former by Frayer and his followers; each group zealous for its own plan of procedure.

To say the least, wonderful results have been obtained by each of these operations. In the pioneer days of the work both operation and after care were very crude. The control of hemorrhage taxed the genius of the supra-public advocates, and the prevention of incontinence, the skill of the latter. The controversy today is as sharp as it has ever been, and the advocates of each operation equally as sure their plan will eventually win.

Twenty-five years ago we naturally undertook prostatectomy with fear and trembling; fear in the first place, that hemorrhage or some accident might result in an operative fatality, and in the second place as to the patient's ultimate recovery. To say the least, the ordeal through which both surgeon and patient passed was great. In those days, the anesthetic was dreaded by both surgeon and patient,—especially the latter. The danger of post-operative pneumonia was great and the long siege of supuration and the crude drainage were so horrible that considerable bravery as necessary on the part of both the surgeon and patient to go through the ordeal.

Today, by the use of sacral and parasacral anesthesia, the improved methods of controlling hemorrhage, and the present means of securing efficient drainage, the horrors of the operation are insignificant and the ultimate results are so uniformly good that the operation is considered a relatively safe and satisfactory one. There is no need of being in a rush when operating under local anesthesia. The tissues are handled with greater gentleness and recovery greatly hastened. This is one of the great advances in this operation.

DENTISTRY

W. M. ROBEY, D.D.S., *Editor*
Charlotte

Preservation or Repair

"If I were a doctor" criticisms in such publications as Collier's only go to confirm the knowledge already possessed by the Medical and Dental professions that the evolution of the laity in realization of the efforts made in their behalf is far from complete.

The laity and possibly many of the Medical fraternity also fail to realize that the vast majority of the people don't want to know what these efforts are. They don't want to be bothered with health since they already possess it. They want spart parts, new pipes, held in readiness should an accident occur. "Safety first" is a mere slogan observed by the few, and the doctor, "a trouble man," held in the background, should he be needed, his warnings and advice unwanted and unheeded, unvalued till trouble occurs.

Prophylaxis is the dentist's old slogan, his warning that goes unheeded: "A money grafter advertising his wares;" his slogan in the same class as, "It pays to trade at Smith's."

This ignorance is not the ignorance of the un-educated. Even a judge of our higher court takes a fling at the efforts of the State Board of Health and its tons of advice, without realizing that the fault lies principally with the should-be recipients of this advice.

The dentist alone has plead and preached with tears in his eyes for the care and prevention of the children's teeth, the baby teeth, the first permanent molars, knowing that care at this stage of development is the keystone of dental prophylaxis.

Why should a profession be criticised for the faults and weaknesses of its clientele, when it has lectured, taught, used all means of propaganda to bring home the fact that the necessity for reparative measures is the result of failure to prevent.

Probably one of the first preventive steps in the life of a child is the care of teeth. This should be started as soon and before there are teeth. The proper

development of the fetus is dependent on the condition of the mother and her proper nourishment.

The foundation for good teeth is probably laid at this stage. But the real service of the dentist should be required soon after the teeth appear in the child's mouth. In reality, in the majority of cases, the dentist is called upon, not when the tooth appears, but when the toothache appears. No wonder he has that helpless, hopeless feeling. He can stop the toothache, but that vicious chain of events, the dread and fear of the dentist; the memory of the pain and suffering has started in that little head which is vastly more serious than the cavity that caused the toothache.

The child should not have toothache, should have little cause of dread of the dentist. Faults in the teeth should be corrected as soon as they appear. This can only be done by the early cooperation of the parent or other agency in control of the child, with the dentist. Children in orphanages have a better show than children in the care of their parents. They show less dread of the dentist and the dentist has less dread of the child, than is the case with outside children. Also, where statistics are kept, they show that children in such institutions have less dental troubles, that children's diseases are more rare and less severe; epidemics seldom.

Preventive measures cannot be taken after the calamity has happened. It is too late when the child comes with cavities of decay, pulps infected, abscesses formed, for prevention. Reparative work, which is an ordeal to both the little patient and the dentist, is in order. The excuse of the parent that she "couldn't get him to come," shows weakness of character and not love of the child, parental personal comfort and not the child's welfare.

But the constant bombardment with tons of advice, is gradually having its effect; not through the efforts of the laity, but through the State Board of

Health, by which our school dental clinics are established. The work of the public health nurses is often criticised. But the work slowly goes on, and prevention makes progress in spite of the hindrance of the beneficiaries themselves.

PEDIATRICS

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Deficiencies of the Schick Test

It is always a matter of regret when one has to turn on an old friend, and wonder whether he is worth retaining on friendship's roster,—and, if he is, whether perhaps we have not rated him too high. Such however is the predicament in which Dr. W. H. Kellogg, of Berkeley, California, finds himself, with regard to that one-time very highly valued friend, the Schick test. Many of us would not have dared to come out frankly and criticize the Schick; and yet we have begun to realize that whereas we used to employ it a great deal, we are now using it much less widely,—and this in the face of the fact that we are doing more toxin-antitoxin protection against diphtheria all the time. Just why is this? There are a number of reasons, some of which Kellogg states with much force.

In the first place, he tells us that a high percentage of false negative Schicks has been found in persons following immunization, the information as to their true status having been determined by laboratory test using the Kellogg method. This is perhaps the most serious charge of all; for if a child has been pronounced immune against diphtheria as a result of a false Schick test, and the parent has been told that "once Schick-negative (and hence diphtheria-immune) always Schick-negative and diphtheria-immune," we have all unwittingly created a false sense of security, which may be the cause of a failure to use diphtheria antitoxin, at a time when such an omission may prove fatal. Further than this, we all know how easy it is to go too deep with our needle in doing a Schick test, in which case we shall have made a hypodermic

injection, and not an intracutaneous injection at all;—in other words, we have not made a test, and yet we believe that we have, and so rely upon the results of a reading which in such a case is falsely considered as being negative.

Children may thus be considered immune, and so be deprived of the protection that would have been conferred by the administration of the routine three injections of toxin-antitoxin.

Kellogg omits one reason which must be considered in the indictment against the insistence upon the Schick test as a preliminary to toxin-antitoxin administration. Simple as the administration of the test may be, to anyone who is doing much testing, the fact remains that there are a number of things about it that are "pernickety" enough to keep it from being used nearly as freely as all of us who have diphtheria control at heart feel that any measure must be used which is to bring this terrible disease under real and definite control. There is the possibility mentioned above of getting a sub- instead of an intracutaneous administration of the test material. There is too the little but annoying fact that the test material must be prepared fresh each time it is used, unless all the tests are made within twenty-four hours, after which time the mixed material degenerates. Then comes in the fact that some slight familiarity with the looks of the reaction is advisable, though of course not absolutely necessary. The possibility of the occurrence of the protein pseudo-reaction may prove confusing. There is some difference of opinion as to when the test is best read,—some men feeling that they should see the patient two or three times in order to make sure of their ground. While all of these points are quite minor, in the case of the man who is specializing in children's work or in contagious-disease prevention, the fact remains that for the vast majority of us general practice is the rule, and anything of this sort that calls for so many fine distinctions is going to be passed by, unless there is some urgent pressure upon us for its employment. While the need of diphtheria protection

is of course urgent enough, in all conscience, still it cannot be called pressing,—in that the pressure which should be applied by conscience and parent usually fails to be applied at all! For a preventive health measure to be widely applied by the vast majority of us, and asked for or even tolerated by parents, it must be simple, easy, quick of performance, and easily explained. The Schick test is none of these, for one who is not doing it constantly. Then too, in the case of the child who is pronounced Schick positive, there is the necessity of taking five injections instead of merely the three that would have been his share had he been given toxin-antitoxin without the preliminary Schick. Now that Zingher has improved his immunizing material by the elimination of such a large percentage of the irritating protein, there is practically nothing to be gained by sparing any child the toxin-antitoxin administration. This was of course not the case two or three years ago, when the reactions occurring in some older children and in most adults were severe, even to the point of actual danger in many instances. As Kellogg points out, general immunization of children without consideration of their susceptibility or immunity will result in complete public health control of diphtheria,—and apparently nothing else will. Inasmuch as very few children are immune in the early years, following the exhaustion of the supply of antitoxin given them by their mothers at birth, and lasting through but the greater part of the first year, the determination of the susceptibility or immunity of a given child is a matter of more or less academic interest, anyway.

It may be that Kellogg is going too far in asking us to discard the Schick altogether. I personally like to give it anywhere from nine months to a year after the administration of the toxin-antitoxin, in order to have some check as to how many of my cases can be considered diphtheria-immune,—relying as I have been doing upon the statements of Park and Zingher as to the reliability of the Schick as a criterion of immunity. Without having read the original ar-

ticle (the abstract from which this editorial was written was obtained from the digest of current medical literature in the Journal of the American Medical Association for November 21, 1925) in the American Journal of Public Health, I should hesitate to say whether the Kellogg test alluded to ought to take the place of the Schick for this follow-up test. My own feeling is that I am given comfort and encouragement in my custom of dispensing with the preliminary test; but that I shall continue using the Schick as a follow at the end of nine months or so, until I find some stronger reason than has yet been called to my attention for substituting some other and better test for it.

Meanwhile, let us remember that the simple antitoxin treatment for diphtheria has failed, and is failing, to control the disease as a menace to childhood. On the other hand, let us realize that "in New York City, where immunization with toxin-antitoxin has been carried out on more or less of a mass scale, during the past few years, the average mortality per one hundred thousand and population during the years 1920-1924 inclusive was 13.9, while the average for the preceding five-year period was 22.0! So, whatever we think of the Schick and its use, let us have no division of opinion as to the imperative necessity of using toxin-antitoxin, as a long step toward the eventual elimination of diphtheria.

GETTING OUT THIS MAGAZINE

Getting out this magazine is no picnic.

If we print jokes, folks say we are silly.

If we don't, they say we are too serious.

If we publish original matter, they say we lack variety.

If we publish things from other papers, we are too lazy to write.

If we stay on the job, we ought to be out rustling news.

If we are rustling news, we are not attending to business.

If we don't print contributions, we don't show proper appreciation.

If we do print them, the paper is filled with junk.

Like as not some fellow will say we swiped this from another magazine.

And we did.

RADIOLOGY

JOHN D. McRAE, M.D., *Editor*
Asheville

Sketch of Radiology

Few of the changes in the thirty year period ending with this year are more startling or more important than those which have been wrought by the x-ray. In an address before the State Medical Association of Texas, which is printed in the November issue of the *Texas Journal of Medicine*, R. T. Wilson outlines the application of these rays to the practice of medicine.

Like most of the real scholars, Roentgen made no extravagant claims for his discovery and refrained from rushing into print prematurely. He acknowledged his lack of understanding of the nature of the rays by prefixing the letter "x", signifying "unknown".

As Wilson very plainly puts it, "First, it was regarded as a rare curiosity; second, as a much coveted luxury; and third, in the present, as an every day necessity." Starting with detection of bullets and other metallic fragments, progress was gradually made to the detection of changes in parts of less and less density, ranging from bone to gallbladder and lung.

It is more than likely that this is the most valuable addition to our diagnostic armamentarium for a hundred years. Every branch of medicine is to a great extent dependent on this agency for diagnosis or treatment. This should make the radiologist proud to assist; not eager to supplant.

The article quoted insists on proper preparation for the practice of radiology as a specialty and loudly warns against the kind of man who spends a few weeks or months at some clinic and then sets himself up as an expert x-ray man. In his opinion, "In addition to his usual four years medical course and an internship, one should not expect to spend less than from two to five years in the intensive study and practice of this special line before he could be considered a finished radiologist, regardless of the amount of general or hospital practice which he may have had."

EAR, EYE, NOSE AND THROAT

HENRY L. SLOAN, M.D., *Editor*
Charlotte

Remarks About the Uses of the Slit-Lamp

The slit-lamp has become recognized as a distinct and very valuable aid in diagnosis of certain ocular conditions. By means of this instrument it is possible to study the anterior portions of the eye with the aid of the corneal microscope under considerable magnification. As Mr. Basil Graves of London says, "When a beam of light goes through the eye which is composed of tiny particles with different indices of reflection, the beam of light is visible. When this beam of light is sharply and intensely defined, the visibility is so definite that it creates an optical section. In order to create an optical section it is essential that the focusing of the illumination is perfect; this is at least fifty per cent of the examination."

By means of this perfectly focused beam of light from the slit-lamp, various portions of the anterior segment of the eye can be minutely examined with the microscope. Thus minute changes can be seen in the corneal epithelium, the corneal stroma and Descemet's membrane. By a dot beam cloudiness of the aqueous can be determined, where it would not be possible without it. Likewise microscopic changes can be seen in the anterior lens capsule and the sub-capsular line, the lens cortex, the lens nucleus, the posterior lens capsule and sub-capsular lines. Of course this makes it possible to determine the presence of early cataractous changes that otherwise must escape detection. Minute, and heretofore unknown, congenital lense opacities are being observed and classified. An entirely new field of study is opened up.

It is now possible to diagnosticate with ease, very early signs of uveal inflammation which have not been possible heretofore. Early treatment can be instituted with distinct advantage.

Recently the writer had the privilege of treating the eyes of a professional friend who had developed a cataract in his right eye because of a long-

standing irido-cyclitis. He first noticed something wrong with this eye in his student days ten years ago. In spite of treatment by a number of good oculists the process went on unchecked. Recently he noticed fine, stringy shadows before his other eye. By means of the ophthalmoscope it was impossible to see any vitreous opacities. However, with the slit-lamp and corneal microscope, fine, stringy vitreous opacities were visible in the anterior vitreous.

Another case in which this instrument was a great help can be related. A young woman came to see the writer about a slight blur before her left eye. The ophthalmoscopic picture was that of an atypical exudative choroiditis. There were very few vitreous opacities and no deposits on Descemet's membrane as observed with the slit-lamp. The Schiotz tonometer showed the tension of this eye to be sub-normal. Transillumination was not perfect; it was very suggestive of a new growth. No retinal detachment could be made out. On these findings a diagnosis of intraocular new growth was made and later confirmed by four other oculists. Enucleation was advised and done, with the result that an intraocular sarcoma was removed very promptly.

Furthermore, it is now possible with the slit-lamp to make a more exact prognosis in penetrating wounds in the eye ball; as it is possible to observe the presence of adhesive bands which will later cause detachment of the retina. A case is reported recently by Mr. T. Harrison Butler of Birmingham, England, in which he was able to get a timely warning of an approaching sympathetic ophthalmitis, and by taking prompt measures at this stage was able to prevent any damage at all to the eye.

LABORATORIES

HARVEY P. BARRET, M.D., *Editor*
Charlotte

Open-mindedness on the Cancer Problem

In a talk made recently by one of the speakers on the occasion of cancer prevention day, in spite of the fact that the audience was made up almost entirely

of laymen, the speaker laid stress on one point and practically on that point alone. He did not tell of the value of surgery in curing early malignant disease; nor did he make a plea for the early examination by a competent physician of all growths or "lumps" when they are first noticed by the patient; nor did he tell of the value of radium and x-ray therapy in selected cases of malignancy.

His whole time was taken up in "knocks" for those who think that cancer may be caused by some infectious agent. He tried to prove how impossible it is for cancer to be a germ disease. He told of how cancer is caused by the misplacement of various cells of the body during the period of early development of the embryo, how those cells would lay dormant for years and then would be suddenly stimulated to take on new and unnatural growth as the result of some chronic irritation. His was a modification of the old Conheim theory. This editorial is not written as a plea for the germ theory of cancer; its purpose is to utter a warning, however weak it may be, against the time-honored practice in medicine to accept without question the theories and pseudo-facts given out by certain workers, and by that means to kill, or to try to kill, any original thoughts or work that doesn't agree with what is laid down by so-called leaders in medical things.

Not long ago the head of one of the largest cancer research laboratories said that no matter how little is known about cancer today, and however meager our knowledge of the cause, *one fact* must be accepted by all those who wish to work on the problem, "It is not an infectious disease and cannot be caused by a living organism." Maybe it is not caused by a "germ." We cannot however overlook the work of Nuzum, who has produced cancer experimentally with a culture of a coccus obtained from cases of carcinoma of the breast. We cannot throw out without consideration the Rous chicken sarcoma which has been reproduced in animals in series by using a filtrate from the original growth. Nor can we treat lightly the work re-

cently done in England by Cye and his co-workers.

As an example of the desirability of forgetting what has gone before, take the work of Banting and his associates in diabetes. Years ago an extract of the Islands of Langerhans had been obtained and used hypodermatically in the treatment of diabetes; but this extract had been discarded as impracticable and had been found harmful to the patient. Suppose Banting had taken that for granted and had accepted the work of those gone before, and not tried further the whole problem, where would he stand at the present day in the treatment of diabetes?

Consider the enormous amount of work done on hog cholera a disease that is extremely contagious and causes the death of thousands of animals each year. A bacillus was found in the blood and tissues of animals infected with the disease; it was grown in pure culture from practically every case of the disease; when injected into animals it produced a disease very similar to hog cholera; yet workers who were unwilling to accept the dictum of the pure science workers found that the bacillus of hog cholera is not the cause of the disease as found in naturally infected animals, but that it is merely a secondary invader,

and the disease is really produced by a filterable organism.

Much work is being done at the present on the subject of immunity production by the local application of dead bacteria. A number of workers have reported good results; yet, because a few have not been able to demonstrate by scientific methods the production of immunity by this method, it is fairly in the way of being discredited.

Probably the greatest need in scientific medicine today is for men who will not be guided alone by the accepted order of things; men who will think for themselves; men who will to be torchbearers, refusing to blindly follow after those who dictate things, not as they are, but as they think they ought to be.

Someone said if you wish to make a contribution to the study of a disease, first read and make yourself familiar with all that has already been done on that disease, then begin your own study. It would seem far better in some instances to forget all that has been done already; forget what other men have found out, or claimed to have found out, and start fresh with a clean slate and accept nothing as proved unless you can prove it to your own satisfaction.

NEWS ITEMS

At a special meeting of the Mecklenburg County Medical Society, Dec. 5, **Dr. Hugh H. Young**, of Baltimore, Clinical Professor of Urology, Johns Hopkins University Medical Department, and Director of the Brady Urological Institute, gave an interesting and instructive illustrated address on the subject, "Recent Progress in Urology of Interest to the General Practitioner." About one hundred twenty-five (125) doctors of the local society and surrounding territory attended the meeting.

At the next regular meeting of the Mecklenburg County Medical Society, which will be held Tuesday evening, December 15th, in the Professional Building, library auditorium, **Dr. Albert Kei-**

del of Baltimore, Associate Professor of Clinical Medicine, Johns Hopkins University, will address the society with the subject, "The End Results of the Treatment of Early Syphilis." A large attendance is expected and the doctors of the Seventh District Medical Society and any others in the adjoining territory who may be interested, are invited and urged to attend.

At a recent meeting of the Board of Directors of the Myers Park Club, **Dr. Joseph A. Elliott** was elected president. At the preceding stockholders meeting, **Dr. John R. Ashe** was elected to the directorate.

At the **Quarterly Meeting of the Sampson County Medical Society**, on December 7, under the Secretaryship of Dr. Paul Crumpler, papers were read by Drs. John D. Kerr and O. L. Parker, Clinton; J. D. Highsmith, Fayetteville; O. E. Underwood, Roseboro; David R. Murchison, Wilmington; and G. R. Faircloth and William F. Rienhoff, jr., Baltimore, Md.

The officers of the Sampson County Society elected at this meeting for the ensuing year were: Dr. J. S. Brewer, Roseboro, President; Dr. J. M. Lee, Newton Groove, Vice-President; and Dr. Victor R. Small as Secretary.

The **Thirtieth Annual Session of the Seaboard Medical Association** (no connection with the Railroad) was held at Norfolk on Dec. 1, 2 and 3. Among the speakers were Curgeon General Hugh S. Cummings, of the U. S. P. H. S.; Drs. J. A. Wilkins, C. C. Smith, Southgate Leigh, B. E. Harrell, James W. Hunter, J. Warren White, Frank H. Redwood, F. C. Rinker and G. B. Byrd, Norfolk; H. H. Trout, Roanoke; J. M. T. Finney, Baltimore; and our own MacNider, Albert Anderson, D. T. Tayloe, jr., S. P. Bass, and Cy Thompson.

The **Franklin County Medical Society** recently elected Dr. R. B. Henderson, Franklinton, President; Dr. S. P. Burt, Louisburg, Secretary-Treasurer; Dr. H. H. Johnson, Delegate to Medical Society of the State of North Carolina; and Dr. B. C. Johnson, Alternate Delegate.

Dr. Rankin to Live in Charlotte.

All Charlotte will be interested to know that Dr. W. S. Rankin is to make his home here after this year. Charlotte's doctors are especially happy over the news. As Director of Hospital and Dependent Children Sections of the Duke Endowment, Dr. Rankin has chosen to establish headquarters in the city most accessible from all parts of North and South Carolina.

There are at present 59 vacancies for officers in the **Medical Corps of the Regular Army**. An examination of applicants for appointment as first lieutenants, Medical Corps, Regular Army, will be held within the continental limits of the United States, January 11 to 15, inclusive, 1926. Applications and requests for information concerning this examination should be addressed to The Adjutant General of the Army, Washington, D. C.

The Alumni Association of the **Ensworth Medical College** was formed in Kansas City in October, with a membership of forty-three. Dr. Charles Geiger of St. Joseph was elected president of the association. The writer is very anxious to have enrolled all the graduates of **Northwestern, Central and Ensworth Medical Colleges**. The dues are \$1.00 per year. All graduates of the three colleges mentioned above are urged to send in their names to the secretary, Charles Wood Fassett, M.D., 115 East Thirty-first Street, Kansas City, Missouri, for enrollment at once.

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REVIEW OF RECENT BOOKS

Transactions of the College of Physicians of Philadelphia, Third Series, Volume the forty-sixth. Philadelphia. Printed for the College, 1924.

We gratefully acknowledge receipt of this volume. Its miscellaneous information makes it valuable, and its authoritative dealing, by various authors, with many of the pressing problems of medicine, is a factor of much more consequence.

Outstanding articles treat of bichloride poisoning, thyroid and hypophyseal pathology, the care of the convalescent, dystrophia adiposogenitalis, bilateral metastatic ophthalmitis, normal and abnormal pupillary reactions, vertigo due to diseased tonsils, vital capacity and convalescent care of heart disease.

Insects and Disease of Man, by Carroll Fox, M.D., Surgeon; U. S. Public Health Service; Lecturer on Medical Entomology to the Class of Student Officers, Hygienic Laboratory, Washington, D. C.; Associate Professor of Hygiene, Medical School, University of the Philippines, etc. With 92 illustrations. \$4.00. Philadelphia. P. Blakiston's Son & Co., 1012 Walnut Street.

Medical entomology is discussed in a practical way which will be readily intelligible to the doctor and health officer.

The first part deals with flies, mosquitoes, midges, sand flies, horse flies, and related species, fleas, chiggers, lice, bed bugs, roaches, rats, and some other pests.

Part II treats of "Diseases of Man transmitted by insects," malaria, yellow fever, dengue, filariasis, trypanosomiasis, plague,—typhus, trench and relapsing fevers, make an important and serious list the control of which is dependent on information such as is contained herein.

A Textbook of Physiology, by William D. Zoethout, Ph.D., Professor of Physiology in the Chicago College of Dental Surgery (Loyola University) and in the Chicago Normal School of Physical Education. Second edition.

\$4.50. St. Louis. The C. V. Mosby Company, 1925.

Physiology is as attractive as it is neglected. If the members of our profession would study it more they would be in much better position to obstruct the progress of all kinds of fakers in medicine as they would thus rid themselves of the great incubus of ignorance of normal human functions.

The book very properly begins with a study of the functions of protoplasm (first form), for here is revealed crudely all that we see in the most complex living being. The chapter on *cellular exchange* is especially clear on infirming. A feature of importance is the saying on occasion, "It is not known."

The part dealing with internal secretions is conservative and reliable, not at all partaking of the qualities of a discourse by a detail man.

The whole is a worth-while junior physiology text-book.

The Therapy of Puerperal Fever, by Dr. Robert Koehler, formerly Assistant of the Gynecological Department of the Krankenhaus Wieden (Director: Hofrat Professor Dr. Josef Halban) in Vienna, Austria. American Edition. Prepared by Hugo Ehrenfest, M.D., F.A.C.S., Associate in Obstetrics, Washington University School of Medicine, Obstetrician and Gynecologist of the Jewish Hospital; Consulting Obstetrician to St. Louis Maternity Hospital, St. Louis. With twenty-seven illustrations. \$4.00. St. Louis. The C. V. Mosby Company, 1925.

Once in a while the appalling death rate from puerperal infection is pointed out in our journals. Within the past year one of the prominent doctors of this State has declared, in the pages of this journal, that the responsibility lays at the door of the doctor of medicine.

This book points out ways and means by which lives of mothers and babies may be saved. The impossibility of sterilizing the hands is emphasized. Rectal, as a substitute for vaginal, examination is given an important place.

"Not much could be expected from a prophylactic immunization by means of vaccines or sera against infections of this sort." "The vaginal douche, as commonly used, has as little curative value as it has prophylactic." Uterine douches are regarded as productive of more harm than good.

The work has the tremendous advantage of definiteness. There are no such vague expressions as "may be used," "is sometimes employed," or "some authorities recommend." It should find a hearty welcome as an aid in reducing our disgraceful child-bed mortality.

Diseases of Infants and Children, by Henry Dwight Chapin, A.M., M.D., Emeritus Professor of Medicine (Diseases of Children) at the New York Post Graduate Medical School and Hospital; Medical Director of the Speedwell Society; Consulting Physician to the New York Post Graduate Hospital; to the Willard Parker Hospital; to the Randalls Island Hospital; to the Convalescent Home for Children, Sea Cliff, and to the Hackensack Hospital; ex-president of the American Pediatric Society and Lawrence Thomas Royster, M.D., Professor of Pediatrics and Head of the Pediatric Department of the University of Virginia. Fifth Revised Edition. \$6.00. New York. William Wood & Company, MDCCCXXV.

Section I deals with unusual care with the care of the infant during the first few days.

Care of temporary teeth is enjoined. "Teething" is of little consequence. The method of examining a sick child is given in detail.

A chapter of unique interest is that devoted to "Signs of Illness in Infancy."

Breast feeding is insistently advocated, supplemented when necessary. Feeding after weaning is carefully outlined.

It is worthy of note that "Infectious Diarrhea" is used to designate what has come to be known as "Colitis" and it is stated that "the dysentery group of organisms predominate." Colored plates illustrating features of the exanthemata are of value in differential diagnosis.

This work departs from the usual hum-drum style of text-book and has many valuable features which make us especially glad to be able to say a good word for a book, one of whose authors is a local man.

Intravenous Therapy. Its Application in the Modern Practice of Medicine, by Walton Forest Dutton, M.D., formerly Medical Director Polyclinic and Medico-Chirurgical Hospitals Graduate School of Medicine, University of Pennsylvania; Visiting Physician to the Northwest Texas Hospital; Visiting Physician to St. Anthony's Sanitarium; Director, Medical Research Laboratories, Amarillo, Texas; Lieutenant-Colonel Medical Officers' Reserve Corps, U. S. A. Illustrated with 64 half-tones and Line Engravings, some in colors. Second Revis-

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SEABOARD AIR LINE ADDS THREE MORE DE LUXE TRAINS TO FLORIDA from the East

The Seaboard announces the establishment of its three de luxe winter trains between New York and Florida—the schedule providing a hitherto unequalled service, carrying the very latest Pullman equipment and more conveniences than have ever before been provided for winter travel between the North and South.

The Orange Blossom Special, one of the finest of trains, made its first trip from New York on November 21st, will operate on a fast schedule to West Palm Beach and St. Petersburg, and will be the only one-night-out fast train to both Coasts of Florida through Central Florida by daylight.

The Seaboard Florida Limited (East Coast) that has for the past twenty-five years served the winter travel to the East Coast of Florida, will make its first trip from New York Monday, December 7th, and because of the increase in traffic to Florida this season, there will also be established the Seaboard Florida Limited (West Coast), operating between New York and St. Petersburg, serving the resorts on the West Coast of Florida. This is a new limited train similar in equipment to the East Coast train. These two Limiteds make the run between New York and Florida in two nights and one day.

Club Lounge Car with barber-valet and shower bath service for men; and Observation Lounge Car with maid-manicurist service and bath for ladies will be provided on all of these three trains in addition to modern section, compartment and drawing room sleeping cars between New York, Washington and the principal resorts on the East and West Coasts and in Central Florida.

With the addition of these three luxurious trains, the Seaboard will have six fast trains between eastern cities and Florida, as well as the popular Sewanee Special operating between the central west and the West Coast of Florida and the New Orleans Florida Limited between Jacksonville and New Orleans which carries the first sleeping car ever operated between Jacksonville and California carried on the Southern Pacific's famous "Sunset Limited" from New Orleans.

With the completion last winter of the Seaboard's new Cross Florida Short Line between Tampa, St. Petersburg and Coleman, through the famous scenic Highland and Lake Region of Central Florida to West Palm Beach, it gave the Seaboard the only line over which through trains could be operated over its own rails from eastern cities to both the East and West Coasts and Central Florida; and made it the only railroad over which a winter ticket can be purchased to West Palm Beach that will enable a passenger to visit both coasts with stopover privileges in Central Florida without additional cost.

The Seaboard is the only railroad with through short line passenger service across the southern peninsula of Florida, and which has shortened the time from about 18 hours to six and a half hours. Heretofore, passengers going from one coast to the other had to make

New extensions are now under way between West Palm Beach and Miami and Florida City, on the East Coast of Florida and Ft. Ogden, Ft. Myers, Labelle, Punta Rassa and Naples on the West Coast of Florida, in addition to applications now before the Interstate Commerce Commission for acquisition by the Seaboard of the Tampa & Jacksonville R. R., the Tavares & Gulf R. R., and the Charlotte Harbor & Northern R. R. The latter line's allocation with the Seaboard is a natural one and will add greatly to the unification of the Seaboard Lines in Florida.

SEABOARD INDELIBLY LINKED WITH FLORIDA'S ACTIVITIES

From Florida's northern boundary to the southernmost tip of the long finger she projects into the bluest of southern seas there is progress so rapid that today's events and plans are almost completely changed tomorrow. Every city, town and hamlet has felt the touch of this magic wand and prosperity without limit has overspread the state. Countless thousands have come and are still coming. Millions upon millions of capital are pouring in for investment and development, and hotels, office buildings and houses are springing up in surprising numbers almost overnight. Work progresses through the electrically lighted hours of the night, as Florida is terribly in earnest over her vast development; and her faith in all that is being done is being backed by the hardest kind of work, the like of which no other state has ever seen.

In time, however, her great "open spaces" will be all too few, due to the gigantic scale on which most of her development operations are taking place—though there still remains ample room for great increases in her population and the establishment of many more cities and towns.

The Seaboard Air Line Railway's many Florida activities are considered as having given Florida's present prosperity a mighty impetus, particularly by the construction of its 204 mile Cross State Line through the beautiful Lake and Ridge Section which was put in operation about the first of this year. This provides a distinct advantage in its through day-and-night service each way between St. Petersburg, Tampa and West Palm Beach and creates a new route from Jacksonville to West Palm Beach. The Seaboard is, in fact, the only line across the southernmost part of the state from the Gulf to the Atlantic.

end and Enlarged Edition. Philadelphia, F. A. Davis Company, Publishers, 1925. \$6.00.

Part I is devoted almost entirely to the history of intravenous therapy, venesection and transfusion and are of interest to the thoughtful and studious. The last two chapters of this part deal with arsphenamin and allied arsenicals, and intravenous anesthesia.

Part II constitutes the book proper. From "Acidosis" to "Yellow Fever" diseases are listed and drugs recommended to be given by injection into the vein.

One is impressed with the frequent repetitions of "may be used." Surely, if an agent has been found useful in a majority of such instances it "should be used."

If all drugs were administered by the vein we would certainly have many more catastrophes than we now have,—by no means all of which are reported. When an unsuitable drug is introduced into the stomach, the organism has a chance to get rid of it; when it is injected into a vein, it is quite another matter.

Applied Biochemistry. By Withrow Morse, Ph.D., Professor of Physiological Chemistry and Toxicology, Jefferson Medical College, Philadelphia. Octavo of 958 pages with 257 illustrations. Philadelphia and London. W. B. Saunders Company, 1925. Cloth \$7.00 net.

An unusual feature of this work, which will attract those not unreservedly committed to precedent, is the carrying of photographs of authors of sections. Fortunately these photographs are of men of such distinction as to silence most of the rumblings of captious criticism. Benedict, of Cornell; Van Slyke, of Rockefeller Institute; Lewis, of Michigan; Chittenden, of Yale; McCollum, of Hopkins; and Myers, of Iowa, sufficiently guarantee the excellence of this work.

A Text-book of Medical Diagnosis. By James M. Anders, M.D., Professor of Medicine, Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; and L. Napoléon Boston, M.D., Associate Professor of Medicine, Graduate School of Medi-

cine, University of Pennsylvania. Third Edition, Entirely Reset. Octavo of 1422 pages, 555 illustrations, some in colors. Philadelphia and London. W. B. Saunders Company, 1925. Cloth, \$12.00 net.

"Descriptive cases" of previous editions are eliminated in order to provide space for recording new developments. "Diagnosis is the discrimination of diseases by their distinctive symptoms." In that definition the authors reveal the fact that they are writing for the discriminating. There is a finely balanced discussion of the relationship of the Roentgen ray, the microscope, the electrocardiograph, and the test-tube to diagnosis.

The diagnostic significance of special signs is made much plainer than in most of the texts. The role of incipient tuberculosis is called subcrepitant.

In the consideration of different diseases, a feature of value is a sub-head "Principal Complaint," a vast improvement over the usual rambling "may-be-presents." One might well wish that "Laboratory Findings" and "X-ray Findings" had been used instead of "Laboratory Diagnosis," and "X-ray Diagnosis."

Formulas for determining heart strength are scoffed at and the tendency to depend on elevated blood pressure as a criterion of toxemia of pregnancy is deplored.

Electrocardiography and the arrhythmias are discussed clearly and instructively in twenty pages, the study of which will make intelligible to any doctor much which is now, to him, mere jargon.

Under "Valvular Disease" a sub-head "Mechanic Influence of the lesion" is a valuable feature. The microscopic examination of the blood, blood chemistry and serum diagnosis being detailed in a book on medical diagnosis makes it clear that these belong properly in the knowledge of the diagnostician and that he is the individual on whom devolves the responsibility, and who should be competent, to review all the findings and pass final judgment.

It is refreshing to have a definition of Chronic Appendicitis; to wit., "A condition in which repeated attacks occur at intervals of weeks or months, each relapse being characterized clinically by the symptoms and signs of acute appendicitis." With this definition one can have little quarrel, unless with the term *chronic* for which might be substituted *intermittent* or *recurrent*; but it is so much of an advance on the general run of expressions on the subject as to well merit praise. It means much more than constipation, sour stomach, heaviness after meals or giddiness, each of which has been attributed to *chronic appendicitis*.

As a whole the volume may be said to be a book on diagnosis which follows the orthodox method.

Pitfalls of Surgery by Harold Burrows, C.B.E., M.B., B.S. (Lond.) F.R.C.S.
Surgeon at the Gosport War Memorial Hospital, Assistant Surgeon at the Royal Ports-

mouth Hospital, Late Consulting Surgeon to the British Expeditionary Force in France, Late Hunterian Professor of Surgery to the Royal College of Surgeons of England, Late Senior Assistant Surgeon to the Seamen's Hospital, Greenwich. Second Edition. \$4.50. New York, William Wood & Company.

It seems most appropriate to substitute quotations for other forms of review.

From preface to Second Edition:

The first edition of this book fell into the hands of the lay press. Sensational copy could be extracted by unscrupulous journalists, and so material, which had been intended for medical men alone, was exploited and misrepresented in order to amuse the public. Therefore in issuing a second, enlarged and amended edition, it has been thought well to change the title from "Mistakes and Accidents of Surgery" to "Pitfalls of Surgery," and it is hoped that any prejudice or annoyance that was unwittingly created by the former may not be sustained by its successor.

The book itself is the outcome of a collection of mischances garnered from the experience of time. It is founded on precedent. Hypothetical pitfalls have been ignored, attention being given only to actual occurrences, on the simple and sure ground that what has happened once may come about again. Text-books and teachers have been so much concerned with constructive information, that relatively little has been said about this subject of the difficulties and dangers of surgery. A minor volume devoted to these matters may therefore be a useful supplement to the major works upon which the surgeon's confidence has been nourished. Here and there the author has intruded his own opinions upon matters which are debatable. However, mere catalogues are tiresome. Dr. Johnson allowed his personality to parade openly through the pages of his dictionary; and where he led surely a smaller man may follow. After all, one's private conviction may be of use if only to ward off the

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reader's drowsiness, for they are sure to meet with opposition. The writer's chief fear is that there may be too much condiment of this kind. If there is, he craves forgiveness and the toleration that comes from a fellow understanding. He asks also to be pardoned for any appearance of pomposity, and assures the reader that many years of labor have taken away all the plumes of pride which once as a young man he possessed and fondly flourished. His desire now is, not to hold forth from the tribune, but to mingle among his fellow men, especially the younger ones, and to offer such humble help as one student can always render to another.

From preface to First Edition:

All that I hope to accomplish is to save some surgeons, and some patients too, from wreck-

age, and to arouse and fertilize the imaginations of those who care to read and earnestly to think. And if anything that I say should bear the appearance of arrogance or conceit, let me publicly confess that this book has arisen from a sorrowful contemplation of the many surgical errors which I have myself committed.

Samples:

A man sustained a fall from his horse, receiving a contused and slightly lacerated wound of his left forehead and supra-orbital ridge. When seen by his doctor he had drunk a stiff whisky and soda, and was unnaturally excited and talkative. The opinion was expressed that "he had better keep quiet for a bit and he will be all right." It soon became obvious, however, that the diagnosis and prognosis had

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been too optimistic, for the patient remained excitable and strange in his manner for a considerable time, and moreover became completely blind in the left eye from atrophy of the left optic nerve.

In another case I was sent for by the house surgeon to operate upon a baby who was thought to have an intussusception. The symptoms were suggestive of this condition. Inspection of the child's napkins, however, raised doubts, for though blood and mucus were present they were in small quantity, and the mixture was brighter and cleaner looking than the efflux from an intussusception. Further inspection showed that the child was suffering from a unilateral prolapse of the anal mucous membrane, replacement of which effected a relief from all disquieting symptoms.

Psoas abscess I have seen regarded as a hernia. The abscess was pointing below the outer half of Poupart's ligament. There was an obvious impulse on coughing and the lump was reducible, and doubtless these two features were responsible for the error. As a matter of fact, the situation of the lump and its warmth should have made clear its nature at once, the spinal rigidity being a confirmatory sign.

A stout business man of fifty-four, had suffered from occasional pain in the right loin for several years. Repeated x-ray examinations had shown beyond any doubt the presence of a calculus in the right kidney. One day he began to suffer from haematuria which was profuse, and on this account came under the care of a London surgeon. Finding that the patient had a big prostate, and considering other features including the profuseness of the haemorrhage, the surgeon supposed that the enlarged prostate was the real source of the bleeding, and accordingly he removed the gland. Nevertheless, the patient while convalescing from the operation suffered again from haematuria, and presently from rigors also. Another operation was rendered necessary and a pyonephrotic kidney was excised.

Any fool can make an excuse, and in any event excuses are ready enough to be found. There was an excuse, perhaps more than one, for the surgeon who removed a large ovarian cyst from a patient and some years later was asked by the same patient to remove a tumor of her remaining ovary. The surgeon agreed to perform the operation, during which he pushed a large ovarian trocar into the rounded swelling which arose out of the patient's pelvis. Failing to empty the "cyst" in this way, he withdrew the trocar and thrust it into another part; again with failure. He repeated the attempt a third time before he realized that the supposed cyst was in fact a pregnant uterus. The operation terminated with a hysterectomy.

Comment:

I have met a surgeon who solemnly assured me that he could not remember having made a serious mistake in his work. He was quite sincere in what he said; and his good opinion of himself is not inexplicable. In the first place, it is difficult, unless we have cultivated the practice, to see clearly our own faults. In the second place, even if we do make what might be called a "howler," nature very kindly allows us to shut the portals of remembrance upon it, and we recall the event out of the past no more. Such oblivion is well enough for a man's happiness, but it does not help him to advance in his art. The road to high achievement was never the one of ease; and unless the surgeon can inscribe his failures indelibly upon his mind he will in the end merely resemble the old experienced general whom Frederick the Great likened to a certain mule who, though he had served through many campaigns, remained a mule until the last.

The main tributaries of the stream of error alone will be discussed, leaving the multitude of minor runnels to the reader's imagination. These main tributary streams are four in manner; they are Ignorance, Carelessness, Misjudgment, and Defective Technique.

The laity are too ignorant to protect themselves from the surgeon who overrates his own ability at their cost. And as for him, who shall administer reproach? He does not measure correctly his own ignorance. None but the wisest of men can master such a difficult task as that. The current year's files of the Times will show some amazing examples; men with good intellects and world-wide reputations writing and appending their names to the utmost bosh. . . . The occasional operator is a public danger.

From the delightful letter of the publishers, in which we heartily concur:

Many a physician and surgeon who would really appreciate a valuable new professional book is going to be afflicted as usual with the customary lurid neckties, self-smoking cigars, and socks which make him blush to meet his professional brethren. However, we are sending on a review copy of Burrows—Pitfalls of Surgery, which is the new edition and trust that you will be able to find space for a word of praise for a really helpful and practical book. The price is small, only \$4.50 and we trust that the Spirit of Christmas will so loosen the purse strings of slow paying patients that your readers will feel able to treat themselves to a copy of the book, at Christmas or later.

The reviewer regards this book as of sufficient importance to demand this extended treatment, because its pages abound in information of the life-saving kind.

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FOR AN ENDOWMENT FOR THE
PHYSICIANS' HOME

The campaign to establish an endowment fund for The Physicians' Home, the first small unit of which is already in service at Caneadea, N. Y., was launched Monday, November 23, at the Waldorf-Astoria, New York. An impressive gathering that included men and women prominent in medical, financial and other fields heard noted speakers outline the purposes of the campaign and laud the movement. A number of substantial donations were received indicating the interest of the profession and the public.

Excerpts from the addresses of speakers follow:

United States Senator Royal S. Copeland, M.D.:

"I hope and trust that there are people enough in this country who appreciate the sacrifices made by the medical profession so that there can be abundant money raised to build a home big enough to take care of all the doctors who need it. I do believe there is that in the heart of the people who have been served by the medical profession to make them glad to furnish the money to build and equip this home."

Congressman John J. Kindred, M.D.:

"From every sentimental standpoint, from every humanitarian standpoint, from every practical and economic standpoint, there can be but one conclusion as to the urgent necessity for a national physicians' home. Of course it must not be left out of the consideration that this home, in order to be a real credit and a blessing to physicians and to our nation will require a vast deal of money. I am very sure that this great humanitarian plan shall not fall through because of lack of plenty of money."

Samuel Untermyer:

"Above and beyond all professions and occupations, and quite in a class by itself, stands the physicians' as the emblem and personification of a life dedicated to public service in its highest

sense. It is no exaggeration to say that fully one half of their professional lives are devoted to public charity work. To your everlasting credit be it said that no man can attain the highest professional eminence who does not participate in this service.

I believe that there will be a quick and generous response to this appeal. To think otherwise would be to lose one's faith in the sense of justice of our people.

I wish you every success and pledge you my fullest support."

Rabbi Israel Goldstein, representing N. Y. Board of Jewish Ministry:

"The physician, most of all, is society's creditor. Mankind will never be able to pay its debt to its physicians and that debt is owing to the humblest among them, because from the bottom to the top, or rather from the top to the bottom, the physician is a servant of God and a servant of man; the physician is the hero and the martyr, whose martyrdom is little heeded, because it is so usual, and therefore I feel confident that this project will earn the support of men and women from all walks of life, for anyone to whom the name of physician means service cannot refrain from holding up your hands, Mr. Chairman, in this noble work you are launching tonight. That the medical profession itself will support it, is beyond question, first, because the strength of a profession is measured by its organized solicitude for its weakest members, and surely the medical profession will not be adjudged anemic; and secondly, because benevolence towards the weaker colleague is to be expected of the physician most of all. In the course of his duty, he sees it every day. To the layman, in the full robustness of health and prosperity, it may be necessary to make an appeal to the imagination, and draw before his mental eyes pictures of need, but he, too, will respond."

Dr. Walter P. Bowers, Editor, Boston Medical and Surgical Journal:

"I want to extend to you as far as I am able the spirit of cooperation which

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The plant consists of twelve separate buildings, located in a beautifully shaded fifty-acre lawn, in the midst of a hundred and twenty-acre tract of land. Remoteness from any neighbors assures absolute quietness.

The large number of detached buildings makes easy the satisfactory and congenial grouping of patients. Separate buildings are provided for men and for women. Rooms may be had single or en suite, with or without private bath. A few cottages are designed for individual patients.

The buildings are lighted by electricity, heated by water, and are well supplied with baths. The water supply for the entire institution is derived from an artesian well on the grounds, of approved therapeutic value.

The scope of the work of the sanatorium is limited to the diagnosis and the treatment of nervous and mental disorders, alcoholic and drug habituation.

Every helpful facility is provided for this, and the institution is well equipped to care for such patients. It affords an ideal place for rest and up-building under medical supervision.

Four physicians reside at the sanatorium and devote their entire attention to the patients.

A chartered training school for nurses provides especially equipped nurses—both men and women—for the care of the patients.

Systematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

Jas. K. Hall, M.D.

O. B. Darden, M.D., Associate

Paul V. Anderson, M.D.

J. H. Royster, M.D., Associate

I am sure exists in Massachusetts, and how far you may be able to go in co-operation with this organization which already exists, I am unable to say, but it seems to me very proper—and I hope it can be brought about—that our State organization may in some way cooperate with you, even if it does not become absorbed in your larger plan.”

Dr. Morris, President of the Home:

“None of the doctors are to be subjected to institutional methods. They will be free to come and go as they please. Those who have nothing will pay nothing. Those who can afford to pay for part or all of their care (and there are many such) will be allowed to do that.

“The Directors of The Physicians’ Home are all busy men actively engaged in professional work and receiving no compensation for their time and labor, willingly expended in this charity, the need for which has been brought so strongly to their attention. They feel that it is time, in the larger development of the institution to secure an endowment which will allow them to transfer the responsibilities to men who are trained in social service relating to institutions.”

Dr. William H. Dieffenbach:

“It was my privilege, some three or four years ago, to become interested in the Physicians’ Home, and I became very deeply interested, owing to the fact that a woman physician whom I had known for a number of years, who had devoted over 45 years of her existence in taking care of the public, serving in the clinics, and in teaching others as a volunteer, had reached a stage in life and in circumstances that prevented and precluded any further activities. She called at my office and this concrete example I think will bear the whole project home to every one of you and bring it to a focus so that everyone of you will understand the importance of this.

“She said, ‘Doctor, I have just one thousand dollars. I am 71 years of age. All the rest of my family have died. I do not wish to go into a poorhouse. What shall I do?’ I had received the literature of the Physicians’ Home a

year before, and had subscribed in a small way, and I had their literature before me at that time. I told the lady that I would see if I could get her into this home that we were speaking of. Without the slightest difficulty, Dr. Morris and his colleagues admitted this lady, a lady of very high culture. I myself accompanied her to the Home. She received a welcome there. She inscribed her name in the book as a guest, just as she would at a hotel. She received a private room, with things that the ladies like, plenty of closet room, and she was at home. She was in a very bad nervous condition. She was in a state of health that foreboded the worst. The air, the splendid country around Caneadea, built her up, and after six months of gratuitous board at that place she was able to find, amongst some distant friends, another home to which she afterwards went. It meant the saving of life of this very fine, cultured woman.”

Don C. Seitz, of the New York World:

“It is a curious thing about humanity. Away down at heart, it thinks that the doctor, the clergyman and the editor ought to work for nothing and board himself. I know from experience, because my father was all three. He began life as a doctor, passed many years as a clergyman, and wound up as an editor, and had the opportunity to experience this feeling in each of these capacities. Why it should be so I do not know, but I know that it is true, and I know that we do not half appreciate the sacrifices of the three professions in this great and noble land. I hope some effort will be made to extend this movement outside of the profession. I know what it means, and I know one thing that you ought to do: You ought to stretch this movement out. Don’t put too much on your own shoulders. Remind the public that this need is their need.”

Campaign headquarters have been established in the Times Building, Times Square, New York. Contributions should be forwarded to that address, in care of the treasurer, Albert G. Weed, M.D. Other officers and directors are Robert T. Morris, M.D., President; Wil-

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liam H. Dieffenbach, M.D., Vice-President; Silas F. Hallock, M.D., Secretary; and Drs. Warren Coleman, Max Einhorn, Wolff Freudenthal, J. Richard Kevin, Stephen V. Mountain and Ralph Waldo.

It was disclosed at the inaugural banquet that of the more than 140,000 physicians in the United States approximately 5 per cent are incapacitated. It is these the Home seeks to serve.

Coffee Drinking By Children.

Coffee drinking by children has long been regarded with disapproval by pediatricians. There are a number of objections to the practice, among which its harm to the nervous system is important. It is entirely conceivable that the use of caffeine-containing beverages by the child will lead to the production of serious nervous defects later in life.

In their recent book, "Safeguarding Children's Nerves" (1924), Doctors Walsh and Foote clearly indicate that there is an increasing nervous instability of American people as demonstrated by the failure of many of our troops to withstand the stress and strain of active service. These writers believe that the numerous cases of shellshock which which were suffered by many American soldiers in the World War were nothing more than cases of hysteria. It is possible that the early use of coffee has had a contributing part in causing the lack of nervous balance that is exhibited by so many adults in this country.

The drinking of coffee in the United States is steadily increasing, and the average annual consumption now amounts to thirteen pounds or more per capita. No small portion of this coffee is used by children, as shown by a study of the diet of a large number of children of preschool age at Gary, Indiana. This survey was made by the Children's Bureau of the United States Department of Labor. The report mentions that "two-thirds of the entire group were found to drink coffee habitually, and forty per cent to have it more than once a day. Not only so, but in certain of the groups of foreign-born parentage, cof-

fee was drunk by more than ninety per cent of the children, and three-fourths of the Polish group had it two or more times a day."

In 1912, C. K. Taylor, a psychologist, made a study of coffee drinking by school children. He found that out of a group of 464 children, over seventy per cent of them were coffee drinkers. Moreover, and more important still, he discovered that those children who drank the most coffee received the lowest grades. There is no doubt but that coffee drinking is generally deleterious to the nervous system. But the greatest harm done to children by this drink is its replacing milk in the diet. The Gary report, referred to above, states that coffee drinking by children "appears to have been inversely proportional to the use of milk. Not only do the schedules show about the same percentage of children drinking coffee as those lacking milk, but a comparison of coffee drinking by milk groups shows the use of coffee to increase markedly as the amount of milk decreases." Commenting upon the disastrous effect of replacing milk by coffee, the report states further: "To leave out milk and substitute coffee plays havoc with any diet, whatever may be its redeeming features."

It is a well known fact that children easily acquire a taste for coffee and are less willing to drink milk after being permitted to use coffee. Miss Lucy H. Gillett, Superintendent of the Nutrition Bureau of the New York Association for Improving the Poor, says in this connection that "children will more often like milk if they are not first taught the combination of milk and coffee."

There are two important reasons why coffee should not be given to children. First, it has the harmful effect of crowding milk out of the dietary of the child. Second, it is an undesirable and unneeded stimulant.

In view of the fact that a large number of American children, especially in the industrial classes, are coffee drinkers, the matter is worthy of serious consideration.

—From the Mellon Institute of Industrial Research,

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Tobacco Smoking

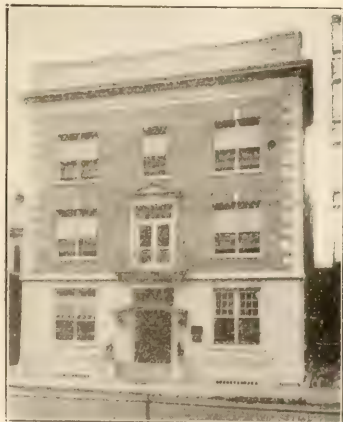
There has been some parallelism between tobacco and alcohol in respect to the controversies that each has aroused. Both have been hailed by many as harmful and by some as actually beneficial to those who indulge. Each is concerned with the establishment of habits that may not be approved. Further, each substance has been charged, on the one hand, with being a stimulant or, on the other, as bearing all the stigmas of a depressant drug. The evident propriety of exercising care in forming a judgment and discretion in stating a belief respecting such debated topics challenges those who discuss such controversial topics as tobacco presents, with the necessity of securing objective data rather than subjective impressions wherever this is possible. Even so, variations in susceptibility and tolerance—factors of human experience that are as yet little understood—suggest the use of caution in making generalizations. To say that overindulgence in any substance may produce harm is a platitude. It may apply to turnips and tomatoes as well as to tobacco.

Mendenhall has endeavored to relate his observations to the widespread impulse to indulge in a smoke. Since feeling or sensation is an expression of our physical state, it would be logical, he says, to conclude that man feels

best when he is in a normal condition. Rest has the effect of causing a return to a normal state, and it is common knowledge that many fall into periods of rest so easily that it acquires the character of a habit. According to Mendenhall, smoking has an effect similar to rest except that it is a much more marked and rapid effect; and if we may look on resting as a habit, it is not surprising that a more powerful agent, such as smoking, should engulf a much larger number of people. It should be emphasized, however, he adds, that the effects obtained by smoking are much more intense in the way of depression than in the way of stimulation, and thus resemble the action of our so-called habit-producing drugs. What chemical component is responsible for the results described has not yet been ascertained with certainty. In any event, Mendenhall believes that the commonly experienced stimulating action of smoking on one who is depressed, and, conversely, the depressing effect on one who is irritable, fits in with the observations in which the threshold for nervous reaction was accurately measured. Both the advocates and the opponents of tobacco will find items of interest and consolation in the research just reported.—*Jour. A. M. A.*, June 27, 1925.

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THE NATIONAL, STATE, AND LOCAL TUBERCULOSIS ASSOCIATIONS
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